

COMPUTERWORLD

Database administration

Security lapse bedevils users of SQL Server

Microsoft, Sybase promise fixes but provide no dates

By James Daly

Users running Microsoft Corp./Sybase, Inc. SQL Server on an OS/2 network have discovered that its lack of any centralized security administration or reporting tools is hurting their ability to build client/server networks.

The resulting inability to grant and revoke access privileges from a main administrative cockpit has created a management nightmare for computer security staff members.

"We want to decentralize, but managing SQL security is just too much of a headache," said Kevin Kenefice, senior data security analyst at Houston Lighting and Power Co. "Who has the time to go out and tweak security for every server, every

database and every individual?"

Eighteen months ago, Kenefice's organization expanded from a centralized DB2 environment to a networked client/server setup. Since then it has hooked up 400 users to 16 servers throughout the Houston area, most of them using SQL Version 4.2 over a Token Ring network running Novell, Inc.'s NetWare 3.11.

SQL works by collecting data on a server and making it easy for SQL Server, page 24

Red ink soaks vendors

Second-quarter results indicate midrange firms still floundering

By Craig Stedman

IBM may no longer be the industry's driving force, but its \$8 billion second-quarter loss set the tone for other old-line hardware vendors that are also striving to enter the world of open systems.

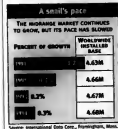
No other company came close to matching the magnitude of IBM's shortfall. However, the midrange and large systems markets remain in flux. Once-fat vendors last week choked up losses, puny earnings or issued fiscal warnings as they struggled with the downward spiral in hardware pricing.

"The business just got so extremely competitive, and the big companies weren't used to that," said David Posa, section leader for scientific systems at Gladden Co. in Strongsville, Ohio. Compaq Computer Corp. recognized that trend in the PC market and turned itself around, but it remains unclear whether

midrange companies can do the same, Posa added. Steve Rager, MIS manager at Smith Industries Ltd. in Malvern, Pa., noted that as vendors move toward open systems, "I don't know if I care whose box I use." A Digital Equipment Corp. user now, he said he "could see the day four or five years from now when there's not a single piece of DEC equipment in this building."

Source: International Data Corp., Framingham, Mass.

Midrange players, page 87



Gerstner bites bullet: Margins, write-offs contribute to \$8B loss



By Johannes Ambrosio
ARROCK, N.Y.

IBM Chairman Louis V. Gerstner's disclosure last week that 85,000 people will leave IBM by the end of next year—to the tune of \$8.9 billion in write-offs—was the latest bullet-biting example of why he is winning good reviews after four months on the job.

Among the positives: his continuing focus on cutting operating costs, as underscored by last week's announcements (see story page 14); his increased emphasis on customers, as evidenced by the two or three he meets with each day; his appointment of strong outsiders to key management positions; and his decision to keep IBM as one large company with many discrete pieces, instead of breaking up the monolith into baby Blues.

Also in Gerstner's favor, at least so far: He opted to tweak Gerstner, page 14

IN THE FIRST DAYS

Client/server computing strategies

Outsourcing's pricing conundrum

By Mark Halper

With the tides of change pulling many information systems captains in a client/server direction, critics are questioning the ability of outsourcing steeped in mainframe ways to go with the flow.

But even setting aside the debate over whether old-school outsourcing can become capable designing computing technologists, another issue remains. After so many years of honing

► An outsourcing firm's cost structure is often too complex to allow for a "one-size-fits-all" pricing model. "We're not going to give you a price," says a pricing specialist.

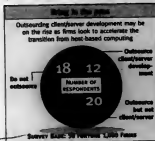
highly profitable cost/price formulas to compute mainframe outsourcing contracts (see story page 68), how do the likes of Electronic Data Systems Corp. and Integrated Systems Solutions Corp. price their services in these new times?

Choppy waters

After decades of basing pricing on host processing volume, outsourcing today are confounded over how to charge for their services in a desktop environment where CPU cycles are less measurable and less outsourcing-reliant.

"All of us in the industry are working on how you deal with this," acknowledged Ron Johnson, a Boulder, Colo.-based manager of systems technology at IBM subsidiary ISSC.

"We're not really there yet because no one has really asked us to put together client/server in a cost/price model," concurred Harvey Co-



sen, director of commercial operations at Unisys Corp.'s system support operations.

Wariness over this confusion helps explain a growing interest in the IS community in structuring deals in which the prime paid are tied into a company's business results (CW, June 21). The difficulty of directly measuring service in a client/server world open an opportunity.

Outsourcing, page 16

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NEWS

- Vice President Gore receives preliminary recommendations for improving government services through information technology. *Page 4*
- Some of Seattle's leading IBM sites prepare sharing data center facilities to reduce overhead costs. *Page 4*
- Microsoft gets Windows NT and Windows NT Advanced Server into production on the same day. *Page 6*
- IBM announces the first Pentium-based server for the midrange market. *Page 7*
- Stratix tries to get in line with current pricing trends by introducing Unix-only fault-tolerant models costing almost 50% less than its current models. *Page 8*
- Boundary Routing technology for remote sites helps 3Com appeal to large companies. *Page 10*



■ IBM changes components, design and sourcing methods with new ValuePoint models in an attempt to prevent future backlog problems. *Page 16*

■ Despite the estimated \$12 billion price tag, Midwest flooding has had little impact on data processing operations across the country. *Page 20*

■ The Federal Emergency Response Agency scrambles to reshape systems for flood relief support. *Page 29*

ADVANCED TECHNOLOGY

■ It sounds like science fiction, but molecular computing may not be as far off as you think. *Page 28*

DESKTOP COMPUTING

■ NBC's Operation Peacock outfits stations with desktop systems in a drive to improve sales and marketing productivity. *Page 37*



Alan Dearing of Peoplesoft says there's an 80/20 rule for global use of software. Culture and local regulations usually require customization of about 20% of the programs in any overseas location. *Page 74*

WORKGROUP COMPUTING

■ Compaq Computer installs a new client/server personnel system that will have 6,000 client PCs, allowing employees to maintain their own personnel data. *Page 53*

■ NetFrame's Concerto software enables users to run multiple operating systems on a single multiprocessing server. *Page 53*

ENTERPRISE NETWORKING

■ Confused about which networking technology is appropriate for which application? There's good news: The smoke is clearing. *Page 57*

■ Texas Micro gives NetWare users a reasonably priced option for internetworking. *Page 57*

LARGE SYSTEMS

■ You don't have to be an outsourcer to find opportunities for savings in an IS operation. Many shops are turning down outsourcing proposals

as they catch on to the economics. *Page 63*

■ D&B Software's decision to put all of its SmartStream chips on Sybase's SQL Server database draws some questions. *Page 64*

APPLICATION DEVELOPMENT

■ Digitaltalk offers a tool for rapid visual development and incorporation of CICS transaction processing requirements. *Page 69*

MANAGEMENT

■ As many multinationals have discovered, software often doesn't travel well. Standardization across many countries should be approached cautiously. *Page 74*

IN DEPTH

■ The next software frontier isn't new applications but more content-rich applications capable of seducing reluctant users. *Page 79*

CAREERS

■ For traditional programmers, a shift to object-oriented tools requires some technical adaptation but mostly a mind-set change. *Page 87*

MARKETPLACE

■ Short-term leases can be a very smart approach to large system acquisition. *Page 89*

COMPUTER INDUSTRY

■ Network operating systems vendors Novell and Banyan Systems experience very different fiscal quarters. Novell is predicting its worst in several years, while Banyan's was the best in its 10-year history. *Page 97*

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Editorial/Viewpoint *Pages 32, 33*

Friday Stock Ticker *Page 98*

Executive Briefing

There is often a good reason to shy away from early implementation of new technology. The IS department at CNA Financial in Chicago had a long, hard climb back from a disastrous foray into distributed computing three years ago. After a total revamp, the initiative is back on track, but re-engineering is expensive: CNA will spend more than \$30 million this year. *Page 12*

SUN, there are sometimes compelling reasons to walk the leading edge. Bank of America says its decision to commit to Microsoft's Windows NT was born not of any desire to pioneer but rather of a need for the information services and sharing offered by the EIS/Office multidimensional spreadsheet database. *Page 6*

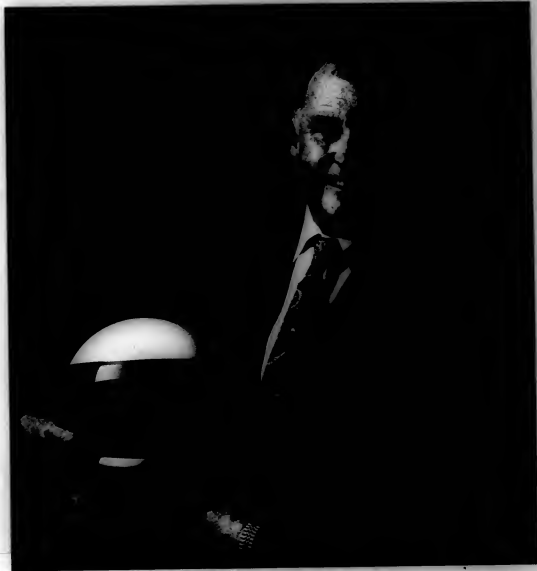
Though shoddy is common as companies transition to client/server and may only get worse in the short term. Chief difficulties are achieving interoperability when multiple suppliers are the norm and guiding users through a tough transition without adequate training budgets. A study of 150 Fortune 1,000 companies

commissioned by the user group Open User Recommended Solutions and conducted by Garbar Group, Inc. in Stamford, Conn., found that 85% said they expected re-training needs to increase in the next few years. However, less than half of them expected their training budgets to increase. *Page 10*

The lack of network security tools has also been a sticking point for many companies trying to make a move toward client/server. Users running Microsoft/Sybase SQL Server on an OS/2 network say the absence of centralized security administration and reporting tools impedes efforts to build client/server networks. *Page 1* Also contributing to the confusion are a lack of benchmarks in

areas such as evolving networking technologies (*Page 67*) and confusing benchmarks. Charles Rebeck says the dispute between Oracle and the Standish Group over the research firm's criticism of Oracle's Systems 7 benchmark results will probably never see a courtroom. Reason: Much of what Standish says is true. *Page 36*

Is outsourcing a smart option for those consulting firms? Critics contend that outsourcers, most of which have roots in the mainframe world, are not equipped to deal with client/server issues. *Page 1* And prospective customers are asking whether they might be able to save more with a savvy internal IS group. *Page 63*



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Seattle IS: Can we talk?

By Jean S. Rozman
SEATTLE

A group of top information systems executives in the Seattle area have organized themselves to figure out how — or even if — this city's major mainframe data centers could share resources.

In recent weeks, the group has met to discuss the construction of a shared data center to stretch IS dollars during tough economic times. IBM's Integrated Systems Solutions Corp. (ISSC) has been leading some of the group discussions, several IS executives said last week.

So far, there has been no decision — and there may never be, some of the attendees said. "We're still deliberating," said Bruce L. Carlson, general manager at Pacoac, Inc., a Management Information Systems Division in Renton, Wash. "It's inconclusive, but we're optimistic that, either on our own or with IBM's help, something can be done."

Among the companies represented, several Seattle users said, were Puget Sound Power & Light Co., US West Communications, Inc., Washington Natural Gas Co., Nordstrom, Inc., King County Medical/Blue Shield, Safeco Insurance Company of America and Pioneer.

"We're all looking for ways to reduce costs while maintaining control over the computing assets," explained John Rowlands, vice president of IS at Washington Natural Gas. "We've heard some of the outsourcing stories," he said. "Some are horror stories, and some aren't. We said, 'Let's get a handle on all of our options.'"

Stiffed at being left out

Some area IS executives were critical of the concept — and unhappy that they were not invited. "I can't even picture how it would work because you could never have enough equipment on-site at one time to meet everybody's needs," said one executive who declined to be named. He also questioned whether competing demands for computing power add differing business cycles might make the very concept of a shared megadata center impractical.

But others, who have been involved for a period of months, said the concept began with discussions about sharing data resources in a regional mainframe pool. It evolved into a round of specific discussions with ISSC over the creation of a shared data facility in the area.

Some participants sought to downplay the significance of the recent meetings. Robert Nelson, director of corporate IS at Puget Sound Power & Light, said the meetings were part of an ongoing series of meetings among Seattle IS executives. The IS executives have long been associated through their involvement in the Society for Information Management, he said. "We've been meeting for years. Not only have we shared our jobs for a long time, we're personal friends."

But Nelson acknowledged there have been some meetings with ISSC and IBM competitors such as Electronic Data Systems Corp. to discuss outsourcing. "These are tough times for our business, and I'm sure any slight movement generates a lot of interest," he said, referring to ISSC's involvement in the meetings.

White House gets tech advice

Gore report focuses on practical technology highlighting 'best practices'

By Gary H. Antiles
WASHINGTON, D.C.

The information technology team behind Al Gore's "reinventing government" effort will today deliver to the vice president his draft plan for a wider and wiser deployment of computers and communications within the federal government.

The report will not be made public until it is presented to President Clinton the day after Labor Day. But sources said it will spotlight and recommend for broad adoption a number of "best practices" — high-speed networks, electronic benefits transfer, geographic information systems (GIS) and public access to on-line data — culled from federal, state and local governments and industry.



City of Phoenix's Lorraine Rodgers: Effort would have been doomed without 'best practices' approach

"This report represents things that really can get done," said team member Lorraine Rodgers, director of MIS for the city of Phoenix and a veteran banking industry information systems manager. "We will have some fantasy and science fiction stuff, but we'll say, 'Get to that in a few years. Here's what to do now.'"

The draft report for Gore, who is heading the six-month National Performance Review, is a major part of an overall plan being put together by 200 people from 11 agency teams and 11 cross-agency functional teams.

During the next month, the recommendations from the information technology team will be integrated with those from other review groups. The president is expected to immediately implement some of the items by executive order next month and call for legislation for others. By the meantime, federal agencies will begin working on items that can be implemented without changes in regulations or funding.

Rodgers said the effort would probably have been doomed to fail — as some other attempts to improve the workings of the bureaucracy have — if the team had started with a blank sheet of paper. Instead, she said, the "best practices" approach provided

some quick points of focus as well as some means for benchmarking the workability of ideas.

For example, much touted in the nation's capital of late is the few Cores of fiber-optic cable that will soon carry voice, data and video to state agencies, schools and libraries. Nine federal agencies that recently completed a study of the network hailed it as a "unique laboratory" and concluded that its promised improvements in service delivery could be expanded nationwide.

Basically, they've wired the whole state with fiber," said Larry Bernsky, director of the Center for Information Management at the National Academy of Public Administration in Washington, D.C. "It's a microcosm for the national information highway."

Also recommended

These recommendations will likely be in the report.

- Bring government services to places such as shopping malls via multimedia interactive kiosks. A model is the PC-based "Postal Buddy" already in a few locations, that processes change of address requests, dispenses stamps and performs a few other tricks.

- Make much greater use of the Internet to provide public access to government databases and services. For example, the government might give industry on-line access to 6T bytes of patent and trademark data.

- Build on projects in place to Maryland and other states to expand electronic distribution of food stamps and other benefits, such as welfare.

- Stimulate Phoenix and other localities by building a national infrastructure of GISs and data to support a host of functions in law enforcement, natural resource management, agriculture, transportation and other areas.

- Knock down barriers between citizens and government via toll-free telephone numbers with Touch-Tone input and automated voice response. The Internal Revenue Service is doing that to let taxpayers get answers to commonly asked questions, obtain tax forms and even file simple returns.

- Push ahead with the development of the National Information Infrastructure, built around the "data superhighway" long championed by Gore, to move medical care, educational services and on-the-job training to all corners of the U.S.

Charles Brownstein, co-leader of the information technology team and director of the Office of Planning and Assessment at the National Science Foundation, said few of the team's recommendations will require legislation.

Many can be set in motion by simple handshakes among agency heads, and some will require executive orders from the president.

"A year from now many of these recommendations will be regarded as 'no-brainers,'" he added.

Bernsky, who is not a part of the National Performance Review, said the review is going well.

"At a minimum, they have been able to capture the attention of people in all the agencies. It's

brought together people who were working on this but working it alone. I think the result of this will be to start to change a culture of insularism in the [government's] information technology world. People will start saying, 'The data I have here is going to go to some other agency or state, so I better architect accordingly.'"

Corrections

• Because of a reporting error in the July 25 issue, the level of use of Lotus Development Corp.'s Freelance Graphics at Pepsi-Cola Co. was misreported. Freelance Graphics users tend to use their presentation graphics packages more frequently than users of Microsoft Corp.'s PowerPoint packages.

• Because of a reporting error, Alan Seiles, Connecticut Mutual Life Insurance Co.'s vice president, individual life insurance, was incorrectly identified in a story in the June 28 issue.

• Despite the fact that TSI International's Trading Partner PC ranks third in electronic data interchange (EDI) software market share, the product was not included in the July 12 Buyers' Scorecard on EDI software because an insufficient number of users was available.

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News Shorts

Networking chiefs depart suddenly

The heads of two networking companies resigned last week: Ralph Ungermann announced that he has stepped down as chief executive officer of Ungermann-Bass, Inc. in Santa Clara, Calif., and Protoson, Inc. President and CEO Patrick Courtin resigned. Ungermann is leaving to form a new venture, Mesagriste, UB and Asynchronous Transfer Mode partner BBN, Inc. in Cambridge, Mass., have formed a new company called LightStream.

Tandem announces quarterly loss

Tandem Computers, Inc. is true to its warning. Last week announced a \$44 million quarterly loss on revenue of \$476 million and began its second restructuring in two years. This time, the firm will reduce its work force by 15%, and paychecks will be cut 5% firmwide.

Hackers sentenced to jail

Two members of a computer hacker ring known as MOJ, or Masters of Disaster, were sentenced in New York federal court to six months in prison, six months of home detention and 750 hours of community service. Paul Strin and Elias Ladopoulos, both 23, pleaded guilty in March to conspiracy in a scheme to break into corporate and university computer systems.

International cable plans move forward

Nynex Corp. said companies from 10 countries agreed to jointly plan and develop a \$1.2 billion undersea fiber-optic cable. The pact was signed by firms from Gibraltar, Hong Kong, India, Indonesia, Italy, Japan and the UK. The 25,000-km cable will connect three continents through 14 landing points on a route stretching east from the UK to Japan. Nynex said it will be ready for service in December 1996.

More computers in the dell

Dell Computer Corp. this week will release three desktop lines, including NetPlex, a line targeted at Compaq Computer Corp.'s high-volume ProLinea models. Dell will also release OptiPlex, an enhanced version of its L and M desktop lines that include the Video Electronics Standards Association VL local bus. Dell will boost its low-end Dimension line as well, bringing out the Dimension XPS, which will include two graphics accelerator options to help the machines hit up to 60 million WinMarks.

IBM consolidates consulting unit

IBM is expected this week to transfer responsibilities for the IBM Consulting Group from the company's application solutions unit to IBM North America, the company's marketing arm, according to analysts briefed by IBM and sources at the company. The move, which will be announced internally, was designed to provide the group's 500 consultants with additional expertise about vertical industries.

SHORT TAKES William R. Johnson Jr. resigned last week as vice president of corporate marketing and head of the Alpha ASP program at Digital Equipment Corp. ... Oracle Corp. said Oracle 7 for Windows NT has gone into beta testing and should be available within 60 days after Microsoft Corp.'s Windows NT ships. ... Anthony G. Ward, most recently director of information technology at Swiss Bank Corp. in Chicago, has joined the Philadelphia Stock Exchange as executive vice president and chief operating officer. ... NCR Corp. announced that its NCR System 3000 platform will be the first to support Computer Associates International, Inc.'s CA-Unicenter systems management product set for Windows NT.

More news shorts, page 16

Microsoft moves NT into production

Dual delivery promised for NT and Advanced Server packages

By Christopher Lindquist

REDMOND, WASH.

Users still cannot hold the baby, but Microsoft Corp. finally went in to labor with Windows NT last week, delivering the long-awaited operating system to the production line.

Contrary to the comments of many industry pundits, the company announced that full-function Windows NT Advanced Server will arrive at the same time as its more client-oriented sibling.

Retail versions of Windows NT and Windows NT Advanced Server should be available in the middle of the month for \$495 and \$2,995, respectively, Microsoft said. Pricing for upgrades from Windows or OS/2 to Windows NT will be \$255, upgrade from LAN Manager to Windows NT Advanced Server will cost \$595.

Ready for action

Beta-test users in general have described Windows NT and Windows NT Advanced Server as ready to ship, with only minor bugs still being reported (see story below). However, potential customers will be able to get a known buglist from Microsoft, with bug fixes and updates to that list being made available on CompuServe. Among the issues in need of resolution are the following:

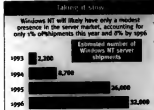
- There are missing drivers for some CD-ROM drives and sound cards.

- "There is an support for 'dongles,' hardware security devices that attach in parallel ports.

- Windows NT cannot read DoubleSpace compressed drives.

- The Novell, Inc. NetWare Requester is still in beta testing.

- There are problems with some Small Computer Systems Interface adapters and CD-ROM drives working after installation of Win-



Source: InfoSource, Santa Clara, Calif.

- Windows NT but not during the installation.

- No fax software is currently available, as there are no drivers for any fax modems.

- Windows NT for Digital Equipment Corp.'s Alpha systems may not be available for 60 days. A coupon for the Alpha release will be included with Windows NT.

- But while NT may soon hit the shelves, applications for the new operating system may take some time because developers need to test their products on final code before shipment and because some vendors are wary of developing for an operating system that has no proven sales.

Bank of America puts early stock in NT Advanced Server

By Michael Vizard

DANFORTH, N.C.

While most information systems shops are still in the early stages of evaluating the Advanced Server edition of Microsoft Corp.'s Windows NT, Bank of America Corp. has already moved one NT server into production. The bank is moving to Microsoft's next-generation operating system for performance and standardization reasons.

Currently, Bank of America has NT Advanced Server on a 66-MHz Intel Corp. 486-based PC from Dell Computer Corp. The PC is employed solely to run a multidimensional spreadsheet application called ESSbase from Arbor Software in Santa Clara, Calif. Advanced Server provides the speed

needed to run what is essentially a database application running under LAN Manager. It is linked to about 55 users running Microsoft's Windows, Excel and Word.

Bill Carpenter, vice president of PC/MIS at the bank's banking information unit of Bank of America, said he has been running the ESSbase application on NT for two months, with only one crash attributed to it.

Lack of the draw

Bank of America fell into NT because Carpenter wanted to use ESSbase, which was being beta-tested on NT. Fin group had been relying on three 16-bit OS/2 Version 1.3-based LAN Manager servers, which continue to run the unit's file server operations.

"I wouldn't be surprised to see some 'Let's wait and see what happens' [by developers]," said Jim Robert, vice president of business development at Q+E Software in Raleigh, N.C. He noted that many vendors followed Microsoft's OS/2 lead in previous years. "Some developers didn't ever get over that."

Others did, however, as several companies have announced availability of Windows NT applications. And at least one reseller, the Programmer's Connection in North Canton, Ohio, has already started advertising Windows NT for ESS and Advanced Server for \$885.

For corporate developers, the release of Windows NT will mean a chance to start investigating serious development efforts on a shipping platform, though some firms punted on developing with a beta-test version of Windows NT.

"As soon as we get the gold code for NT, we will move all developers to NT," said Louis Kahn, chief of computer and network operations for the National Immunization Program at the Centers for Disease Control and Prevention in Atlanta.

Kahn said it is the immunization program coordinators' intent to move at least 50% of the 300 users to Windows NT by year's end and 100% by 1994—assuming no serious bugs surface. He said the primary goal of moving everyone to Windows NT is to gain a more "robust" environment and to take advantage of 32-bit 486 platform firms.

"They're incredibly stable," Carpenter said.

Even so, he said he expects to migrate LAN Manager file services to the 32-bit NT environment sometime early next February.

"The NT server we have has been fabulous. You can't really compare a 16-bit environment to a 32-bit environment, but the performance is great," Carpenter said.

The move to NT is also being driven by a desire to consolidate the number of application programming interfaces his small staff currently supports for a mix of Windows and OS/2 applications.

"I don't really want to get caught in the middle of arguments between Microsoft and IBM. We want to concentrate on one set of technologies where possible," he said.

Carpenter said he intends to put an SQL Server application on the NT server in the near future; he will also look at moving some client applications to the NT server.

IBM jumps on Pentium server bandwagon

By Stephen P. Klett Jr.
ROCHESTER, N.Y.

Action in the middleweight server division promises to heat up this fall with the debut of the IBM PC Co.'s first Pentium-based server.

Announced last week, the Personal System/2 Model 95 560 puts IBM in the ring with competitors that have already released Pentium-based servers such as AST Research, Inc., Compaq Computer Corp. and Hewlett-Packard Co.

Slated to ship in September, the 560 will include the following: Intel Corp.'s 60-MHz Pentium microprocessor; Small Computer Systems Interface-2 (SCSI-2) support; error-correcting code (ECC) memory; expandable from 1MB to 128M bytes; and security features such as password access and boot-sequencer control.

ECC memory was designed to eliminate errors and potential server downtime without interrupting performance, and SCSI-2 support allows data transfer rates of up to 10M bytes/sec.

The debut of the 560 is a precursor to a

host of announcements customers can expect to see by year's end (CW, July 19).

"We're making big investments in our server business and will be making announcements through the whole family in the fall," said Dave Saxby, general manager of server systems at the PC Co. For example, users can expect to see Pentium support for IBM's high-end PS/2

Server Models 195 and 295, he said.

While he said he hoped IBM would unveil a server based on the 66-MHz Pentium chip at the same time, analyst Randal Giusio at WorkGroup Technologies, Inc. in Hampton, N.H., said the 560 "gives IBM a pretty fresh, well-rounded server line to sell."

"Basically, they now have the feature

set to make them more competitive," Giusio said, referring to the ECC and SCSI-2 additions.

The PS/2 Server 95 560 in a base configuration—including 256K bytes of Level-2 cache, 16M bytes of ECC memory and a SCSI-2 controller—will cost approximately \$13,000.

Users contacted were either unfamiliar with the product or declined to comment on how the server fit into their plans.

At long last



Apple's Newton MessagePad

After nearly two years of beating the publicity drum, Apple Computer, Inc. Chairman John Sculley today will unveil the Newton family of personal digital assistants.

The first to be introduced will be the handheld MessagePad, an executive organizer that can read handwritten notes and then automatically add an appointment to a calendar, dial a phone or send a fax. An entry-level model starts at around \$700.

More than 1,200 firms are developing retail and in-house Newton applications, but only about a dozen MessagePad applications are expected to be on retailers' shelves by next month. About 50 are expected by Christmas.

Apple officials said they expect "several thousand" MessagePads to be for sale at this week's MacWorld show; full availability in retail outlets such as CompUSA, Inc. is expected by Labor Day.

—James Daly



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Stratus moves server down stream

By Craig Stedman
HAWKSBORO, MASS.

Trying to shed its midrange image and ride the shift toward lower end systems, Stratus Computer, Inc. plans today to introduce Unix-only versions of its XA/R fault-tolerant computers priced almost 50% lower than current models.

With base pricing cut from \$124,000 to \$80,000, the seven new systems, called the XA/R-S series, represent Stratus' first real attempt to compete in the emerging client/server market, according to Barbara Babcock, vice president of marketing.

Until now, the company has avoided the under-\$100,000 market, "where you

can position yourself at the top of the [low-end] server range," she noted.

Industry observers agreed that Stratus' move, which comes just two weeks after archival Tandem Computers, Inc. repositioned its fault-tolerant line as Unix-compatible servers [CW, July 19], is needed in order to make the company's systems more price-competitive with

more conventional machines.

The existing XA/R hardware "is an expensive box," said Jonathan Lawry, a consultant working on a Stratus installation at Boston's Logan International Airport. He added, however, that the cost can be justified for applications such as Logan's ground security program.

According to Larry Cardwell, director of business development at On-Demand Technologies, Inc., an Austin, Texas, developer of interactive video software for

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Pump it up			
Specifications for selected models of Stratus' lower cost XA/R-S servers, which are topped off by a new four-processor system			
	16000	32000	64000
Number/Type RISC processor	1 16000	1 32000	4 16000
Maximum memory	256M bytes	512M bytes	128M bytes
Maximum disk	240M bytes	576M bytes	576M bytes
Entry price	\$69,000	\$147,000	\$204,000

the XA/R line, Stratus' lack of a low-end offering has required him to cut special deals with some prospects.

"We had to look for ways to provide them with entry-level equipment if we decided they were a strategic customer," Cardwell said. The pricing on the new models should "allow us to go into a wider range" of account a, he added.

Five of the XA/R-S models use the same 8600-based hardware as Stratus' previous low-end and midrange models but have lower prices and expanded memory and storage capacities, the company said (see chart above). New low-end, two-processor and four-CPU mid-range models are also being added.

The XA/R-S systems will run only Stratus' FTX Unix derivative when they ship this month. Support for the proprietary VOS operating system may be added later, "but with this announcement, we wanted to just specify some initiatives in the open systems market and not really muddy it up with both VOS and FTX," said Bill Ledingham, manager of XA/R systems marketing.

Stratus plans to add to its client/server capabilities late next month by shipping a fault-tolerant version of Novell, Inc.'s NetWare that has been in development for the past two years, Babcock said.

Despite the new low-end focus, the company does not intend to become a PC local-area network server vendor, Babcock added. "We are overinvesting in the code in the LAN environment that could do database and other critical server functions, rather than as the environment itself," she said.

Right on target

Stratus said it is on target to shift the XA/R line from the VMS to Hewlett-Packard Co.'s Precision Architecture-RISC microprocessors in late 1994/early 1995.

Precision Architecture-RISC microprocessors in late 1994/early 1995.



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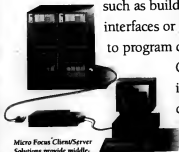
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Microsoft lowers expectations

By Michael Vizard
REDMOND, WASH.

Microsoft Corp. executives sounded a cautionary note late last week, telling analysts to expect measurably slower growth in fiscal 1994, due to a dependence on low-margin upgrades.

The downbeat view came on the heels of the company's posting of almost \$1 billion in profits for fiscal 1993 ended June 30, on revenue of \$3.75 billion. In fact, Microsoft reported its first \$1 billion revenue period in the fiscal fourth quarter, which also ended June 30 (see chart page 87).

In particular, Microsoft executives said the company will not be able to maintain momentum in the first fiscal quarter of 1994 because the next major wave of new applications, which account for 57% of revenue, will not have a financial impact until the second fiscal quarter. Long term, Microsoft officials said they expect Windows NT to provide less than 10% of Windows sales, at best.

In addition, Microsoft said it does not expect to deliver any major updates to Windows, beyond the recently launched Windows NT, until the first half of 1994. System software accounts for 34% of the company's revenue.

"Microsoft's outlook this year is much more cautious, and I think it's justified," said Lee Spelman, a vice president at J. P. Morgan Investment Management, Inc. in New York.

"You have to remember that they don't get a lot of ongoing maintenance revenues. So they have to reinvest the prod-

uct line every year to maintain growth," she added.

Microsoft expects that its biggest challenge in 1994 will be persuading users to upgrade to the forthcoming version of its Excel spreadsheet and Word word processor, while maintaining acceptable margins in a business that will be driven by low-price upgrades.

Hands full

In fact, Microsoft's challenge to get sites to upgrade may be even greater than it appears, given the mood of some information systems shops.

"Because of budget cuts, our business units want us to slow down. They're saying they have too much technology right now," said Paul Danton, director of tech-

nology planning at Pacific Gas & Electric Co. in San Francisco.

"We're going to wait for them to get it right. We've learned to curb our appetite," said Philippe Hoare, manager of corporate MIS at Occidental Petroleum Corp. in Los Angeles.

Microsoft's schedule calls for the delivery of Excel 5.0 and Word 6.0 before Jan. 1, 1994, followed by upgrades to the rest of the company's applications. That schedule is part of an effort to break down the boundary between applications using the Object Linking and Embedding 2.0 interface, noted company Chairman Bill Gates.

Following this effort, Gates said Microsoft's next major application upgrade effort will not take place until after the

company deploys Windows 4.0, a 32-bit implementation code-named Chicago that is expected to arrive in the first half of 1995. That offering will be followed by the launch of Office 95, an object-oriented operating system scheduled to debut in the second half of 1995, Gates said.

Because of this scenario, Microsoft will live primarily off upgrade revenue in 1994. Those upgrades take the form of individual applications — Windows and Microsoft Office, an object-oriented operating system scheduled to debut in the second half of 1995, Gates said.

"We're not really paying more than the price of a competitive upgrade for software anymore. This is a pricing issue we have to be aware of and respond to," said Executive Vice President Steve Ballmer. He claimed that Lotus Development Corp. recently gave a large IS shop SmartSuite bundled with Notes for \$150 per desktop in a battle for market share.

"We're taking the long-term view. If short-term profit has to suffer to maintain market share and keep up on research and development, then so be it," Gates added. In fact, Microsoft Chief Financial Officer Mike Brown said he does not expect revenue growth to exceed 27% in fiscal 1994, compared with a 36% growth rate in fiscal 1993.

But another Microsoft aim to maintain its dominance over the long term remains to be seen, as its rivals band together in an effort to thwart Microsoft's bid to dominate the content generation of object-oriented software.

In fact, it may be object technology that ultimately proves to be Microsoft's undoing. In the meantime, the long-term remains to be seen, as its rivals band together in an effort to thwart Microsoft's bid to dominate the content generation of object-oriented software.

Pointing fingers

Established by expectations that the Federal Trade Commission will soon take its investigation of Microsoft's business practices, Novell CEO James H. Newman said last week blamed Novell, but he castigates the three-year war as part of a bid to seal the deal.

Answering to Gates, the investigation announced Microsoft's alleged licensing program and any intentional incompatibility Microsoft may have added just to Windows upgrades.

nothing that occurs on the defendant's system," Gates said, adding that Microsoft never intentionally added incompatibility to any of its operating systems.

Given that Novell controls the server market, Gates implied that Novell's alleged pushing of the investigation blinds it of the pot calling the kettle black.

Gates said it would be inappropriate to require Microsoft to freeze development of any one operating system in response to antitrust claims.

"In that case, we wouldn't be able to develop a new version of MS-DOS to take advantage of the long the advance in Chicago," Gates said.

—Michael Plazard

Second time golden for CNA client/server move

By Michael Fitzgerald
CHICAGO

When John Lochow came to run CNA Financial Corp.'s information systems department in 1990, he walked into a technology's nightmare: Not only did users hate his department, but he also inherited a staff on the verge of mutiny following a severely flawed foray into distributed computing.

Three years later, the company will today complete an eight-week, \$300 million rollout to its 70 branch offices.

CNA will spend more than \$300 million this year alone to re-engineer itself. For the money, Lochow and his staff can point to a negligible 150 terminal hours of downtime — compared with 15,000 hours in one year — and to application developers who are producing faster than Lochow can implement their programs.

"If you look at the cost of thousands of hours of downtime [CNA suffered], it totally overshadows what we spent," Loch-

ow said. His group has also managed to consolidate five mainframes into two large machines, eliminating one of its four data centers.

"We were three years behind our competitors, and now I think we're two years ahead in terms of infrastructure," he said. "We have to exploit that now."

Lochow inherited an IS environment that had made a halting attempt to get into distributed computing at a time when it was not well understood. CNA had used PC LAN Program (PCLP), IBM's initial, ill-starred effort at networking PCs. By 1989, it was still not uncommon for major,

400-person branch offices to be down for an entire business day, and half the PCs were relegated to use as dumb terminals.

Worse, CNA's 800-stroop, host-oriented application development staff refused to program for the unstable environment. Still, Lochow was convinced that despite CNA's problems, distributed computing was the best way to go.

To get started, he charged an IS task force with creating a five-year architecture and undertook the painful process of championing a second round of distributed computing.

The task force, which included end users, came up with a four-part project (see chart at left). At the heart of the effort was a decision to pull away from complete systems dependence on IBM. This required hiring nonmainframe staff.

The task force came up with a plan that gutted its infrastructure and replaced the initial PCLP plan with Novell, Inc.'s NetWare. It also replaced its low-speed, wide-area lines with high-speed 56K-bps lines and added an ATAT multiprotocol router to connect its 45 major branch offices to the home office.

Cleaning house

Other steps included consolidating servers and standardizing peripherals and PCs to reduce the number of configurations supported and ease maintenance costs. The process eliminated 5,000 pieces of fully depreciated equipment.

OS/2 is used in run heavy-duty commercial insurance applications tied into the mainframes, giving agents the ability to process multiple policy quotes simultaneously instead of serially. Meanwhile, Windows is used to run the office automation platforms, including Microsoft Corp.'s Office suite.

CNA created Desktop Executive, a password-keyed interface that lets a user call up the appropriate applications set from any PC in the system.

CNA is now poised to install NCR 5450s with Pentium processors and a Sybase, Inc. Unix-based database to allow agents for the first time to query the mainframe directly.

CNA pumps up

The status of CNA's four-part re-engineering effort

STABILIZE THE NETWORK

- Replace IBM's PCLP with Novell's NetWare 3.11
- Replace telecom infrastructure.

SLASH COSTS

- Shutdown a data center.
- Consolidated five mainframes into two.
- Cut branch-office installation costs from \$375,000 to \$125,000.

REBUILD THE PLATFORMS

- Hire talent about 12,000 new 486-based PCs this year.

PREPARE FOR THE FUTURE

- Preparing for possible Novell/Unix mix by adding NCR 3450 servers running Sybase in branch offices.

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\$8B loss

CONTINUED FROM PAGE 1

the sales force to allow for more product and industry specialists instead of going with different sales forces for different lines of business [CW, July 12].

At the same time, Gerstner and his team have started attacking the bureaucracy that is IBM. Among other moves, he has canceled all meetings of the management committee for the foreseeable future. He still meets with top IBMers but not on a fixed schedule. Although known to be a tough questioner with a low tolerance for canned presentations, Gerstner is also more approachable and open to learning from others in ways that previous IBM chiefs have not been. Insiders said.

In fact, the only significant negative so far is Gerstner's refusal to articulate a grand vision for IBM. Although he said he is not yet prepared to do so, Gerstner last week dropped some hints about where IBM is going. IBMers said the strategy is further along than has been publicly acknowledged (see story below).

The more things change... Much like their Digital Equipment Corp. counterparts [CW July 26], many IBM customers said they have not yet seen any major signs of change under their vendor's

IBM's changing shade of blue



new chief — but then, they did not expect to. The big announcements — revamped mainframe software for getting in shape, for example — were in the pipeline long before Gerstner started in May, many noted.

"Is he doing his job? Yes," said Tom Loane, vice president at Alamo Ranch & Co. Inc. in Fort Lauderdale, Fla., echoing the sentiments of other large customers. "Is he parting the waters? No, not yet. Did we expect him to so soon? No."

No message

IBM's cost-cutting extended to its leasing subsidiary, IBM Credit Corp., which took a \$12 million charge in the second quarter in what is seen to be part of a voluntary program.

Others are less impressed. "The loss just didn't leave me with a warm fuzzy feeling," said George Sekeley, president of CSX Technology Inc. in Jacksonville, Fla. Sekeley met Gerstner in Chantilly, Va., during a June mixer of 200 of IBM's largest customers and the vendor's top executives.

Sekeley said that to his surprise, "Gerstner just left us the second day. He was nowhere to be seen. Apparently he had more pressing things to do." Still, Sekeley said he

is very happy with his local IBM sales contact. "I don't think Gerstner has anything to do with that."

Nevertheless, most observers are giving Gerstner high marks — except for the "vision thing," which he has started to address.

"He's concentrating on the correct things. But it's critical for Gerstner and the other executives to get their vision out to the public so customers understand the investments they're making and so they feel safe and secure," said Robert Puffer, an analyst at Gartner Group, Inc. in Stamford, Conn.

Same wavelength

A grand strategy will ensure that everyone at IBM is working from the same set of levers, said consultant Robert Bjurjelovic, president of Amnest Research in Phoenix. "By the end of the year, even with the cuts, IBM will have a quarter of a million people on the payroll. If even one-eighth of those minds are thinking differently, it could mean a shake and conflict," he said.

At last week's press conference, Gerstner said he has no intention of announcing a grand plan for IBM anytime soon.

"The last thing IBM needs right now is a vision," Gerstner said. "But IBM needs right now is a series of very tough-minded, market-driven, highly effective strategies for each of its businesses — strategies that deliver performance in the marketplace and shareholder value."

Adjusting the viewfinder

Louis V. Gerstner said last week he is not ready to provide a big-picture view of where IBM is going and how it will get there. But he did drop some hints that tip his hand a bit.

The grand strategies are in the planning stages, an IBM spokesman said. Company executives met for two days in Chantilly, Va., before customers joined them and formed task groups to determine IBM's plans for the future. Gerstner and strategy guru Bernard Puckett are overseeing these task forces.

Although IBM executives have not publicly discussed these groups, whose work is still under way, some details are starting to emerge.

Among the subject areas: the convergence of computers, communications and consumer electronics; leveraging semiconductor technologies; and leveraging hardware and software technology across various multiple platforms. In addition, each line of business is responsible for defining its own strategy vs. the competition.

"We've got a whole series of strategic efforts under way," Gerstner said.

Those decisions will not be made all at one time but rather will be released "as they're ready," he said.

Internally, IBM executives said, virtually all the lines of business are concentrating on solving large, enterprise-wide kinds of problems, but doing so within the framework of client/server and open systems. Gerstner acknowledged as much during the press conference when he said IBM will "even more in client/server," and the company will continue in its role as a full-service provider of hardware, software and services.

Although there are critics who believe that Gerstner should unveil the grand strategy as soon as possible — certainly by the fall — others said he is doing the right thing by waiting.

"I think what he was trying to say is that people should have confidence in IBM's general direction and should not have to wait for Gerstner to come up with a vision," said James Moore, president of GeoPartners Research, Inc. in Cambridge, Mass. "It was a message designed to evoke confidence."

—Johanna Ambrosio

Stunning cuts said to be last

By Johanna Ambrosio

Last week IBM announced a second-quarter loss of \$8 billion. That included a restructuring charge of \$8.9 billion to pay for 60,000 additional people leaving the company by the end of next year, as well as for closing offices and manufacturing facilities.

Other announcements included the retirements of Stephen Bectel Jr. and J. Richard Munro from IBM's boards of directors. Charles F. Knight, chairman and chief executive officer of Emerson Electric Co., has been elected to the board. IBM is looking to bring in outside board members with technology expertise.

A cut in the dividend from 54 cents to 25 cents.

IBM Chairman Louis V. Gerstner said this should be the end of the massive layoffs and plant shutterings — if planning assumptions are on track.

The current round will eliminate 25,000 people by the end of this year — in addition to the 25,000 already announced, for whom charges were taken at the end of last year. In addition, 35,000 people will leave the company during 1994. All told, IBM will have 85,000 fewer employees on its rolls by Dec. 31, 1994.

Before the special charge, IBM an-

nounced a second-quarter net loss of \$40 million vs. earnings of \$734 million a year earlier. Revenue totaled \$15.5 billion, a decline of 4.3% from a year earlier.

Gerstner said at last week's press conference that "rightizing the company is my highest near-term priority." It is one that Wall Street obviously agrees with. The day of the announcement, IBM's stock price jumped \$3.25.

"Is a perverse way people figure that the bigger the bad news, the better it is because it's over and behind you," said Jay Stevens, an analyst at Dean Witter. "I had forecast a loss of 35 cents; they came in at negative 8." He added he is expecting IBM to break even for the year and end about \$2.50 a share next year.

Although IBM's overall hardware sales declined 13% in the second quarter, to \$7.5 billion, IBM said there were some bright spots. Mainframes did better this quarter than in the first quarter of the year, although they declined compared with the second quarter of last year.

PCs and workstations "did well," IBM said, although company spokesmen declined to provide specifics, and IBM PC Co. reported a profit for the second year in a row.

Likewise, revenue from IBM's services businesses grew by 27%, to \$2.4 billion.

IBM PC Co. pumps up ValuePoint line—again

By Michael Fitzgerald
ROME, N.Y.

The IBM PC Co. last week released redesigned ValuePoints aimed at preventing future backing problems.

Separately, IBM's Ambra Computer Corp. subsidiary will make its U.S. debut today.

While resellers said the PC Co. has largely caught up on its ValuePoint backlog, the new Intel Corp. 486-based ValuePoint SI models represent a strategic shift for ValuePoint by stepping away from its previous "one motherboard fits all" approach.

The SIs use different motherboard and component designs from each other and the current ValuePoint line, and they will also rely on multiple sourcing. ValuePoint designers went with new suppliers for its new designs because "we've had the line go down for days at a time because we can't get a 50-cent part like the blue OverDrive upgrade slot," said Jose E. Garcia, director of ValuePoint development.

The new products use Intel's 25-MHz 1468SX and 20-MHz 486DX, but the SIs lack some of the features of the current versions—for instance, VL local-bus expansion slots. Base price, however, is \$899, the lowest yet for a ValuePoint.

Facing the problem

Analysts praised the PC Co. for addressing a shortcoming in its product design by adding the two new motherboard designs.

Richard Zwetschenbaum, analyst at International Data Corp. in Framingham, Mass., noted that the new models do have potential limitations in terms of upgradability, compared with the current ValuePoint line.

"We like the idea of these products—for as, it's a discount on an existing box," said Victor Mutnick, corporate vice president of information systems at New York Life Insurance Co. Mutnick said the fact that the new ValuePoints lack Pentium upgradability and offer a VL-bus expansion slot means little to his users.

The ValuePoint brand team also pushed to burn out the new products in an aggressive four-month time frame. Analysis said the multiple motherboard designs probably foreshadow the strate-

gy ValuePoint will adopt with an expected major announcement next month that will include energy-efficient models.

IBM also cut ValuePoint prices 11%. In addition, the company today will announce Ambra, a loosely affiliated U.S.

subsidiary Ambra, which sells boxes that do not carry the IBM logo, will share only a name with the Ambra effort in Europe and Canada, where it has been billed a clone killer.

The U.S. version of the company, which will eventually swallow the Canadian side, will target buyers "who want the latest stuff cheap," said David Middleton, Ambra's North American president. He



promised Ambra will turn over its product lines every three to four months, adding technology as rapidly as possible.

Middleton said Ambra hopes to gain 10% of the direct-mail market, which would doom many mail-order companies, according to analysts. While most analysts said Ambra appeared likely to fly, they agreed that Middleton is juggling a lot of balls.

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News Shorts

Textile maker opts for client/server

Graniteville Co., a Graniteville, S.C., textile manufacturer, has signed a \$1.2 million contract with NCR Corp. to replace its proprietary mainframe system with an NCR-based client/server environment. The systems, which include two NCR 3480 multiprocessor systems, will be used for inventory management, customer invoicing and purchase order processing.

Sun reports financial results

Sun Microsystems, Inc. in Mountain View, Calif., said last week that it had fourth-quarter revenue of \$1.36 billion and yearly revenue of \$4.51 billion. Profits for the year ended June 30 were \$165.7 million, or \$14.6 million less than they were last year. Most profits came late in the year, Sun said.

AT&T updates Mac E-mail software

AT&T introduced updated Macintosh software for its EasyLink global electronic-mail service and will demonstrate the product at Macworld Expo/Boston this week. Features include enhanced directory services, support for multiple attachments and background mail-transfer capabilities. General availability is scheduled for September; the suggested price is \$210.

Pen computers can get hot data

Notable Technologies, Inc. will this week begin shipping Mobile Access-Personal, the first program designed to give pen-based access to host-based data. Mobile Access-Personal includes a variety of scripts to give users access to public information services such as CompuServe or Dow Jones News/Retrieval. It runs under Go Corp.'s PenPoint operating system and is priced at \$190 a copy.

Vendors run FDDI through copper wire

Support is emerging for running the high-speed Fiber Distributed Data Interface networking protocol over regular unshielded twisted-pair copper wire. A standard for allowing this to happen is in draft form, so many vendors are beginning to roll out products. Last week, new players entered the market, including Optical Data Systems, Inc. with a hub and Advanced Micro Devices, Inc. with chip sets.

Rexon restructures to save money

Type drive subsystem and backup software maker Rexon, Inc. announced last week that it will restructure its business in response to price erosion and soft demand for its products, particularly in Europe. The St. Paul, Calif., firm will consolidate its four independent subsidiaries under centralized management. The company plans to write off \$35 million to \$45 million for the reorganization, which will result in a loss for the third fiscal quarter ended June 27.

SHORT TAKES Digital Equipment Corp. said the expected release of a version of its RAID Array 1106 disk drive to work with Sun's Scalable Processor Architecture machines has been delayed. The array, originally due this summer, has been pushed into the October time frame. ...James Alexander, formerly senior director of MIS at ABC Radio Networks in New York, has been promoted to vice president of MIS. ...Interleaf, Inc. has signed a pact with Phoenix Technologies Ltd. under which Interleaf will use Phoenix technology to add support for PostScript Level 2 to its document publishing software. ...Collaborative Technologies Corp., which creates calendar scheduling software called VisionQuest, has signed a pact with Intellect Corp. under which the latter company will help port VisionQuest, which runs on Windows and DOS, to Macintosh and Unix platforms.

Standards

Vendors unite to promote work flow

By Lynda Radosevich

Hoping to avoid the embarrassing interoperability hiccups waged last year by messaging vendors, an international group of workflow vendors, integrators and two large end-user companies plan to announce a work-flow consortium next month.

The announcement will be coordinated with the Workflow Conference in San Jose, Calif., on Aug. 12-13.

Called the Workflow Management Coalition, the group's goal is to foster interoperability among work-flow products by developing a consistent set of application programming interfaces (API), formal specifications and protocols. The strategy is to unify the market as soon as possible and avoid API turf wars. In general, work flow is defined as intelligent routing of electronic documents, data and images.

"It's a great idea because one of the problems with work-flow systems is that if you choose one and anybody else in the building chooses another, you're stuck," said

Ronnie Marash, vice president of the Patricia Seybold Office Computing Group in Boston.

"There is no CIO for the universe; companies pick what's best for them. Then we have to figure how to make it all work together. Anything that helps us do that is great," said Nicholas Roud, chief information officer at Young & Rubicam, Inc., an advertising and communications firm in New York.

Vendor roster

U.S. members include Lotus Development Corp., Actio Technologies, Inc., Wang Laboratories, Inc., NCR Corp., Quality Decision Management, Saxon Corp., TSI International, UESI, Inc. and Electronic Data Systems Corp. International members include Cam Geminel Group in France, Staffware and ICL, Inc. in Great Britain, Groupe Bull, Siemens Nixdorf Information Systems, Inc. and IBM Germany. End users include European-based General Motors Corp. and Wurttembergische in Germany.

Notably absent from the group are imaging work-flow vendors

such as FileNet Corp. and application vendors such as Microsoft Corp. Microsoft officials said they were unaware of the coalition, and a FileNet official said the company was not involved in this alliance but was coordinating efforts with Lotus. Additionally, analysts said they expect to see more companies joining in soon.

Work flow is an important technology and a coalition like this is key for helping end-user companies leverage it well," said Lisa Gansky, a managing partner at Technology Trading Partners, a consultancy in Oakland, Calif. Meanwhile, the Groupware Users and Vendors Association will have its first meeting at a groupware conference on Aug. 9-10 in San Jose, Calif. David Coleman, chairman of Groupware '93, said the goal of the group is to raise awareness of the standards for groupware technologies.

Vendor consortia are not a new animal, and many are not successful. However, "coalitions tend to work better than actual standards organizations, and customer participation is key," Marash said.

Outsourcing

CONTINUED FROM PAGE 1

tunity to price deals using new formulas, users said.

In one of the largest client/server outsourcing deals, the \$500 million that Paris-based Europarc International is scheduled to pay Perot Systems Corp. is based largely on revenue-sharing (link to Europe's) business projections, according to Robert Versadoeck, corporate director of MIS at Europarc.

The deal, executed a little more than a year ago, is structured so Europarc will pay Perot approximately 3% of Europarc's revenue after the second year of the 10-year deal. The arrangement provides assurance that Europarc will slash its IS costs from what has been 6.5% of revenue to about 3%, Versadoeck said.

Vendors seemed leathier to discuss client/server pricing. Requests for interviews with EDS and Computer Sciences Corp. were not granted by press time.

"These guys are going to have to price based on what they deliver to the client, not on DASD, CPU cycles or I/O operations," predicted Gordon Kirk, senior vice president of MIS at Hyatt Hotels Corp., who is considering handing over responsibility for Hyatt's Unix-based

Spirit reservation system to a client/server specialist.

"Moving to client/server takes away [outsourcers'] cost advantages," observed Rudy Hirschbein, a University of Houston IS professor.

Jack Eckerd Corp., which earlier this month struck a 10-year client/server outsourcing deal with ISSC, discovered that pricing was no easy matter. Eckerd says Presi-

dent of IS Jerry Rothmeier said the Clearwater, Fla., drugstore chain first figured out how much an in-house conversion from mainframes to client/server would cost and then compared its finding with ISSC's offer.

"It was very tedious," Rothmeier recalled. "We put together a very detailed plan that included what we thought would be the people requirements for developing applications and hardware. We thought the price of hardware would go over the next 10 years."

Rothmeier declined to reveal Eckerd's own estimate. He said, however, ISSC's price was less than Eckerd's estimate.

But in a further illustration of the vagaries of client/server pricing, Eckerd and ISSC acknowledge the deal does not have a firm price tag. Eckerd said it expects to pay between \$320 million and \$440 million during the 10 years of the deal. In some client/server outsourcing cases, vendors are charging flat fees.


When Envas Corp., a Houston natural gas company, renegotiated its EDS pact to accommodate more client/server work, the company agreed to pay a fixed fee for services covering any combination of client/server and mainframe computing, according to Warren Gallant, vice president of Technology Partners, Inc. in Houston.

Price formula

When outsourcing client/server projects, the processing and storage components of the cost-price formula by definition reduced, compared with the host-based pricing formula. If all the client/server assets are to be believed, outsourcing would provide less expensive operations.

Rudy Hirschbein, a University of Houston IS professor, claimed that outsourcing are attempting to figure out how much the job would cost on a classic CPU mainframe basis and charge accordingly.

"The question is, who would obtain the savings?" he asked. —Mark Halper



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Fed agency tailors GIS to locate flooded areas

By Gary H. Axtell
WASHINGTON, D.C.



\$10-billion natural disaster.

Nothing concentrates the minds of workers at the Federal Emergency Management Agency (FEMA) like a

"My focus has been on hurricanes," said Louis A. Wolby, chief of the Applications Division at FEMA's Office of Systems Engineering. "But when the Almighty lets His agenda, we have to redo ours. What we had planned to do over eight to 10 months, we've done in eight to 10 days."

What Wolby's staff and others have been doing is tailoring a prototype modeling and geographic information system (GIS), started in the wake of Hurricane Andrew last year, to support disaster relief in nine Midwestern states devastated by the Great Flood of '93.

ASAP — for All-hazards Situation Assessment Prototype — is a combination of custom-built and commercial software for predictive modeling, analysis, data management, mapping and reporting.

Intended to predict the location, severity and type of damage from hurricanes, it was created to give FEMA more lead time in planning how and where to respond to hurricane disasters.

The plan was to then extend and adapt ASAP in a relatively leisurely way, so it could also handle disasters resulting from fires, earthquakes and floods.

But now FEMA, in just a few days, has pressed ASAP into service for its first megadisaster. While it cannot yet predict the course of the flood or its effects, it is helping the agency and many other federal, state and local groups understand just what has and has not been flooded — a crucial first step in planning and executing relief for tens of thousands of victims.

ASAP gets its flood data from a Thermal Infrared Observation Satellite and from U.S. Air Force U-2 spy planes that carry supercamera cameras that can tell within 5 meters whether a piece of property is under water.

While that may be painfully obvious to

those living near the rampaging rivers, it is information that was previously collected from multiple ground sources in a process that was slow and error-prone. Now, Wolby said, accurate and timely flood-boundary information has been used to do the following:

- ▶ Tell the U.S. Department of Education which schools are flooded to help it decide where to boost student-aid benefits.
- ▶ Show the Centers for Disease Control and Prevention in Atlanta where dis-

Jim Darnes, a member of FEMA's Aerial Reconnaissance Team, said current policy does not allow FEMA field personnel to give subsistence funds to disaster victims until FEMA has verified their claims. But he said the new GIS is timely enough and accurate enough that it could enable FEMA to cut a check for temporary living expenses to disaster victims on the spot, after checking a computer terminal or printout to see if the claimant's address is indeed flooded.

The ASAP flood area network at FEMA headquarters here is "one of the more heterogeneous LANs ever," according to Wolby. Key components include a DOS-based file server running Novell, Inc. NetWare; a "GIS server" in the form of an IBM RISC System/6000 running AIX, a PC acting as a "database server" running The Santa Cruz Operation's SCO Unix and Oracle Corp. databases and an assortment of PCs and RS/6000 user boxes.

The database server holds 115 databases from 27 federal agencies, including more-or-less static data on power plants, hospitals, airports, communications facilities and the like. The GIS loads geographic data related to roads, rivers, land features and elevations, mostly from commercial sources. The third major source of data is the aerial reconnaissance information from planes and satellite.



This GIS image includes a map of the Mississippi River and its tributaries, the river basin and a satellite image of the area during the week of July 18, 1993.

- ease-bearing mosquitoes are likely to arise.
- ▶ Recommended to President Clinton areas to be declared major disasters.
- ▶ Help nine FEMA field offices with local disaster relief.

Flood has minor impact on data centers

By Ellis Barker
CHICAGO

While certainly a disaster of gargantuan proportions for local farming communities, a month of unrelenting Midwest flooding has not proved to be an information systems catastrophe.

Even as some riverside communities sank in water, most data centers were high and dry, said IS managers in the region. The notable exceptions were in Des Moines, Iowa, where flooding caused a loss of commercial power and water in the downtown area, prompting several businesses to relocate to disaster recovery hot sites [CW, July 19].

As of late last week, one financial customer from Des Moines was still operating out of a Comdisco, Inc. Disaster Recovery Services facility in Wood Dale, Ill. A number of Comdisco's Missouri customers have put the disaster recovery provider on alert.

Also escaping with minimal and manageable impact from the flooding were data processing operations far away from the disaster areas — at federal agencies in Washington, D.C., commodity markets in Chicago and private insur-

ance companies across the nation.

In Kansas City, where it rained for all but two days between June 25 and July 25, there was plenty of anxiety over the waves lapping against levees. Wayne Boggs, director of information technology at Kansas City Power & Light, had special cause for alarm, given the loca-

tion of the company's communications network, is operated by 15 of the ES group's 129 employees. The portal of the cave, in a bluff an eighth of a mile from the Missouri River, is the same height as the levee — 52 feet.

"There's been more concern than actual impact," said Boggs, adding that the company lost one local-area network server when thousands of water quickly flowed into one of its power plants. Even if water were to breach the levee, Boggs said he doubted he would suffer more than a loss of power and access to the data center.

Still, better safe than sorry. Boggs last week had his staff walking the levee, watching for breaks. "We've got a hot backup with another 2200 in another building we use for application development and backup testing," he added. As the Missouri and Kansas rivers created last

Tuesday, Boggs said he was confident a move to the hot site would not be needed. In Des Moines and other towns that had lost commercial water because of flooding, users faced the problem of overheating computers.

At Heartland Health System in St. Joseph, Mo., commercial water was lost at

10:30 p.m. on July 24. "Our 3000, which is on a closed loop [cooling] system, wasn't in jeopardy but the telephone system and the servers were cooled by chillers," said MIS director Larry Koch.

Air-conditioning was restored to the two-story hospital within 12 and 20 hours, respectively, said Koch, who used window air-conditioners in the doorways of the rooms because the LAN server and telecommunications equipment.

While Heartland did not lose data or any of its 1200 computer users as a result of the episode, "It has changed our thinking about cooling systems in areas with mission-critical computer systems like telephone systems," Koch said.

Handle on claims

Mounting losses — estimated at \$10 billion to \$15 billion — will mean an increase in federally managed flood insurance claims, but the agency responsible for processing them said it is not overly concerned about bundling the volume.

For now, the Federal Insurance Administration, part of the Federal Emergency Management Agency, has not witnessed a lagging of claims. For some weeks, a Flood Insurance Claims Office has been set up in St. Louis. The center is on-line with the Maryland-based host computer.

The spokesman said the agency closes 90% of claims within 90 days. To date, he said, 4,200 claims have come from the declared disaster states. "At this point, the mainframe is not being run extra hours," he added.



For Des Moines, Inc. owner, Craig Pitt, and workers saving equipment from the retail company plant flooded.

tion of the power company's data center.

For a decade, the utility has operated its data center in the Hunt Midwest Underground, a limestone mine located in a 500-year-old flood plain. There, 150 feet down and a half-mile in from the cave mouth, the power company operates all its administrative systems on two Unisys

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Security lapse bedevils SQL Server users

CONTINUED FROM PAGE 1

mediately available to all authorized users. Security here is key, Kenefic said, but centralizing the administration of that function has been nearly impossible. Frustrated by the lack of a standardized SQL security administrative function, company programmers created print-

tive ad hoc reporting tools.

Kenefic's problem is not unique. It could trip up any company trying to employ a SQL Server setup in a decentralized client/server environment.

"If I was trying to centrally manage the security on a dozen or more SQL Servers,

I'd go nuts," said Michael Fitzmaurice, MIS director at the National Association of Broadcasters in Washington, D.C. "There are just no decent front-end tools [for doing it]."

Sybase, for its part, is not pointing the finger. "We recognize that the tools are not adequate for centralized SQL security administration at this point, but we're working on addressing those issues in the future," a spokeswoman said. She could not say when those fixes would be

in place, however.

What users are finding particularly frustrating is that neither of the other two vendors involved in the SQL Server OS/2 setup—Microsoft or IBM—will acknowledge or take ownership of the problem.

Microsoft blamed the design on OS/2.

"It wasn't designed for managing large collections of distributed servers in a unified way. And this is clearly a case that current products are not addressing," said Gary Voht, Microsoft's senior product manager for corporate and networking systems.

Not true, IBM officials said. "There is nothing inherent in OS/2 that would make it more difficult to administer security," said Art Oberst, IBM's director of local-area network systems.

In fact, Oberst said IBM offers several products that assist in the administration of security. These include Datahub,

SQL Server's primary means of security is the use of a log-in ID to control the data access from the server.



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Under guard

Users want to centralize security administration to block common entry points from security breaches.

Network attack points

- Multiple keyboards
- Several places to print data
- Rooms to lock
- Cables to tap
- Connections to hack

which manages the actual relational data across servers and hosts in a network, and LAN NetView, which manages the different clients and servers on a LAN.

"Third-party options also exist," Kenefic said, but he "wants the major vendors that provide the SQL Server OS/2 product to provide answers."

Remote control

Meanwhile, there are ways of getting around this issue, according to Michael Smith, a senior software engineer at Boeing Computer Services in Richland, Wash.

SQL Servers can remotely connect with other SQL Servers, so an administrator can log in and execute stored procedures, a set of code that automates some tasks. Smith acknowledged it is a patchwork solution but it does save time.

Fitzmaurice said that users would like to see a point-and-click administrative function to grant and revoke security privileges, along with a "kill switch" approach to security administration.

Microsoft plans to add an auditing function to its Sybase System 10 version of SQL Server, but that will not be available until early 1994, Voht said.

Sybase is also working with Tivoli Systems, Inc. on security administration features for a future version of the SQL Server database.

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What's inside



IBM

Tiny technology

The small world of nanotechnology opens possibilities for molecular computing

By Jean S. Bozman

Think small. Really small. Enter the world of nanotechnology, where distance is measured in atoms and molecules, and where the object is to rearrange the elements.

Humans have been trying to tinker with nature's basic forces for centuries, but only in recent years have scientists been able to move atoms, aligning them, like dominos, into simple patterns.

Two distinctly different approaches have developed in the way nanotechnology is being pursued: One group sees it as a form of basic research that will indirectly affect future computing by expanding science's understanding of the forces that hold all materials together.

Another camp sees nanotechnology as a means to an end, a method of molecular manufacturing in which physicists (and, perhaps someday, computer system designers) can build things by placing atoms exactly where they want them. Next, these advocates must find a way to copy those tiny

building-block components to form the stuff of computers, chemicals or mini-machines.

IBM scientist Don Eigler falls in to the first camp, having successfully demonstrated that he can move atoms of the gas xenon at super low temperatures on metallic

surfaces of tiny computers.

"It opens up the possibility, and I emphasize the word possibility, of developing new technologies and a better understanding of existing technologies," he said. However, other IBM scientists at IBM's Thomas J. Watson Re-

search Laboratory in Yorktown Heights, N.Y., are working with silicon atoms and a scanning-tunneling microscope to develop very small electronic devices [CW, Nov. 2, 1992].

The other camp is exemplified by K. Eric Drexler, an academic who laid out the blueprint for molecular machines, factories and computers in his book *Nanosystems* (John Wiley & Sons, Inc.) and *Unbounding the Future* (Wm. Morrow and Co.).

"I would say that the big gap is between people who are in the world of existing laboratory research, doing things with existing equipment," Drexler said, "and people who are using the best available computational models and looking at what we can do with tools we don't have yet."

Drexler said he envisions micro-machines and built-to-order molecules arriving sometime after the year 2000. But the molecular-size tools needed to build designer molecules should appear well before that, he said. They would be used to "replicate" tiny structures, using building blocks sized in the hundreds of atoms to build molecules. He has often cited a 1950 lecture by the late physicist Richard Feynman — who said moving atoms violates no physical laws — as providing the conceptual groundwork for his nanotechnology research.

To promote his ideas, Drexler's nonprofit Foresight Institute in Palo Alto, Calif., is hosting its third annual molecular nanotechnology conference in Palo Alto in October. The past two conferences have drawn fewer than 200 invited guests. But this one, Drexler said, will emphasize the role of computer-aided design and simulation as a way to spur the technology.

Big tiny problems

Before nanotechnology comes off the drawing board, a number of scientific issues must be addressed. Drexler's book, *Unbounding the Future*, lists the following items:

- Thermal vibrations that might shake apart nanotechnology structures.
- The "uncertainty principle" of quantum mechanics that could interfere in obtaining exact atom placement.

• The untidiness of loose molecules flying around finished structures.

• The long-term chemical instability of these tiny structures.

However, Drexler said he believes these worries will prove to be unfounded. He argued that nanotechnology may save the day when traditional lithography techniques used to etch today's very large-scale integration chips reach their physical limits.

Ralph Merkle, a researcher at Xerox Corp.'s Palo Alto Research Center, works with Drexler to model nanocomputer components of supercomputers and Silicon Graphics, Inc. workstations.

"As you make transistors smaller and smaller, you'll reach the point where random fluctuations [in the positions of some atoms] will make some of the transistors [fail to] work," Merkle said. "If we're going to push the lithography limits in 10 years, we need to be researching this new technology now."

Projecting from past trends in computing, Merkle predicted that sometime between the years 2010 and 2020, it may take just one atom to store a bit of computer information.

"I feel confident that, just as electricity came true eventually, bits of this will eventually come true, too," said Paul Seffo, an analyst at the Institute for the Future in Menlo Park, Calif. "But it may come out quite differently than they have imagined."



Photo: IBM

Mini building blocks

Conventional silicon semiconductorers are made by etching circuits into the layers of silicon atoms. Dopant atoms, such as gallium, arsenic and phosphorus, are used to create the gaps that make electrons flow across semiconductor circuits, said Ralph Merkle, a research scientist at Xerox's Palo Alto Research Center.

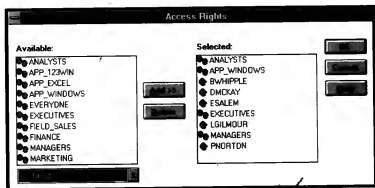
Lithographic techniques used in the etching process do not place atoms individually. Seen from an atomic perspective, it is a rather gross way of fabricating semiconductor structures, nanotechnology advocates said. Lithography is a technology that depends on "statisticians" — that is, the likelihood that atoms will be in the right place when needed. By contrast, nanotechnologists in-

tend to build semiconductor structures atom by atom, assembling them like Lego blocks.

The time scale for development of nanotechnology is reasonably far off. It may not be until the year 2010 or 2015 that nanocomputers or nanomachines are a reality. However, the first building blocks could arrive much sooner.

"We are looking at a series of developmental steps, with incremental payoffs at different levels," said K. Eric Drexler, a leading nanotechnology booster. "Many researchers think we're about one year of hard work away from having a tool that's able to position reactive molecules and to guide chemical reactions by putting molecules together like Tinker Toys."

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Dismantling IBM

The sheer magnitude of IBM's second-quarter \$8 billion loss posted last week shocked many industry watchers, but the news from Armonk was actually pretty good.

The silver lining is that IBM's operating loss was smaller than expected, and the charge it took for cost-cutting measures was surprisingly aggressive. After three months of seclusion, IBM CEO Louis Gerstner is going public with a plan that shows he means business.

Now it's time for Gerstner to articulate that plan more clearly. The initial stirring from the CEO's office indicates Gerstner will not let the decentralization craze ravage IBM into shattering into dozens of autonomous units. That's good because a knee-jerk move to decentralize would ignore the core strengths that IBM as a corporation can bring to the table.

Certainly IBM should be broken up to some degree, but only in those markets where it makes sense: disk drives, printers and PCs, for example. Those businesses are fighting a share war in markets in which small size is a definite asset. For example, IBM's PC business was ponderous and unresponsive when it was part of the mother ship.

The new IBM PC Co. is a role model for decentralization. Slimmed down and outwardly focused, the division is competing effectively in a breakneck business.

But what's the sauce for the goose isn't necessarily sauce for the gander, and the PC Co. model won't fit the rest of IBM's business. There are still tremendous synergies in IBM's systems and software lines, which the company would be foolish not to exploit. What the decentralization fanatics ignore is that IS managers still value a single point of contact and a coherent message from a vendor with which they do a lot of business. IBM has long had that single point of contact. What it hasn't had is a coherent message.

For too long, IBM's sales strategy has been focused on pushing one product line or another. Customers have often felt like hostages in the bolywar between, for example, the AS/400 and RS/6000 groups. That must change. What's needed is a culture shift that turns IBM's sales vision toward proposing a product mix that makes the most sense for the user's unique situation. That won't be easy, but it can be done.

IBM would also be unwise to ignore its potential for industry leadership. One of the most radical—and welcome—shifts at IBM in recent years has been its active participation in standards organizations such as the OMO and X/Open. In an industry that is increasingly jittery over Microsoft's hegemony, IBM has also assumed the unlikely mantle of the beavercreek alternative. As a corporate entity, IBM brings tremendous power to that role, but it can't do that as a loose confederation of satellites. Gervinor would do well to pay attention to IBM's strengths and not let downsize mania bear assert what's taken no long to build.

Paul Allen



Relational redux

I was very surprised to see C. J. Date's naive response to Charles Babcock's "Relational backlash" column [Letters to the editor, CW, July 1991].

Mr. Babcock's analogy about disassembling a car every time it is driven is an excellent example of the overhead that relational systems impose on the computer industry. Relational databases have never been known as high-speed engines, and atomic data items that are shared by many logical objects do indeed require overhead.

It is ludicrous for Date to imply that proper "domain" support within a relational database would allow a relational database to do all the things an object-oriented database can do. I have yet to see any relational database that can fully support polymorphism or multiple inheritance. Most important, it is very difficult to "shepherd" a relational database to support the encapsulation of behaviors.

Contrary to Dale's assertion about the similarity of Codasyl [Conference of Data Systems Languages] to object technology, it is very clear he missed the point. Both models use pointers to link data items together, thereby reducing the overhead of reassembling the objects.

Object-oriented databases also share the concept of "currency" with CodaMyl databases. Currency allows users to see where they are in the database, and the failure of the relational model to support currency is a major drawback.

Finally, Date alleges that the relational model is built on a sound

theoretical foundation. Anyone who has read E. F. Codd's criteria for relational databases knows that attempts to apply mathematical rigor to the relational model fall apart in practice.

Relational databases sacrifice performance to remain flexible, and object technology databases sacrifice flexibility to gain performance. Much of this argument reminds me of the Codasyl bashing that was going on when the first commercial relational databases were introduced.

Donald Burleson
Rochester, N.Y.

Custom definition

I thoroughly enjoyed Amy Berner's "Custom Image" article [CW, July 5] but wanted to clarify an issue regarding U.S. Customs' use of CA's Datacom/DB.

In fact, Datasoft/IS is a high-performance relational database management system. It has an embedded parser and stores its data in a flat file "tabular" arrangement using a novel patented indexing system.

Frederic Diaberevic
Vicepresident, S&O
Computer Associates
International, Inc.
Ithaca, N.Y.

Natural selection

The editorial "Jurassic lark" [CW, July 12] seems to have missed a major component of the "tremors of establisic proportions" that

you are concerned are causing problems for users.

It is the shifting patterns of where money is being spent that are rocking the IBMs, DEC's and now Apples of the industry. And who is responsible for the shifts in purchasing? The users. They are only selfishly interested in their own good, in getting the most value for their system budget dollar these days.

You also failed to note that for every person laid off at Apple, another is employed by one of the companies growing to take its place with products that customers perceive provide more value for fewer dollars. Other than IBM, the computer industry routinely turns over four out of five of its largest suppliers every decade.

What we are just witnessing, again, is the turmoil caused by a phenomenally creative industry continuing to be ripped apart by the greedy and selfish users. Damn their eyes.

Robert Young

Editor

"New York Unit Newsletter"
New York



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System formation Delivery

Charles Babcock

Oracle's moot court

The Stanshild Group issued a report recently that took a swipe at Oracle's System 7 benchmarks and, as competitors ordered copies by the truckload, Oracle filed suit, charging libel and slander.

This is a case that will never go to court. The suit was filed to intimidate a small research firm into a retraction. But the Stanshild Group, far from fading away, is taking every opportunity to trumpet its stand with reported backing from Oracle competitors.



The case will not go to court because if it did it would establish that much of what the Stanshild Group said is correct. Factual accuracy would be a blow to Oracle's suit because one test of libel is whether there was a reckless disregard for the facts. There could still be a

debate over the firm's interpretation of the facts—that Oracle's benchmark was "fraudulent"—but that is a lesser issue.

Walter Baker, chairman of the Technology Review Committee of the Transaction Processing Council, said his committee was asked by Sysbase to review the benchmark and concluded that Oracle had not violated the TPC-A benchmark specification. What Oracle did was base its benchmark on a new stripped-down transaction option, a "discrete transaction," which eliminates useful I/O features. Baker said this is not cheating because "their test was compliant as the specification was written." But the specification is silent on many issues of how a test is to be run, and few Oracle customers say they need discrete transactions in their systems.

If Oracle didn't violate the loosely worded benchmark, its actions are debatable on other grounds. Oracle customers, looking at the benchmark, would tend to compare it to Oracle Version 6 and draw the conclusion that System 7's 1,000 trans./sec. meant Oracle had made a great leap forward. With no mention of the discrete transaction, foolish customers would have no other context in which to view the results.

In fact, a test of System 7 using the same type of transaction as Version 6 would show there was no such leap forward. This of course is another reason this case won't go to court. If it does, Oracle's competitors will eagerly line up to finance a benchmark to illustrate the point.

As Oracle's lawyers know well, the Transaction Processing Council is a quasi-public body with a quasi-public process of validating benchmarks. Once you enter such a process, you are submitting yourself to public scrutiny and comment, and it becomes difficult to plead libel when some of the comments don't go the way you think they should.

In terms of the council's workings, it is questionable whether this quasi-public process is good enough. For example, there is no easily accessible record of the Review Committee's vote. It would shed light on how the council really functions if we could see how committee members voted. A benchmark that makes a database system look fast also shows off the hardware on which it is running and a majority of the seven-member committee was made up of Oracle and three hardware vendors. Two Oracle competitors, Informix and Unify, constituted a minority, while IBM, the seventh member, is both—a vendor whose hardware runs Oracle and a database competitor.

The Stanshild Group is guilty of the same thing that Oracle has always been charged with—flamboyant phronesis. Oracle may summon members of the council to testify that it didn't violate the specification. But in airing how its tests actually took place, it would reinforce the impression that it violated the goals and spirit of the benchmark. And the customer base is a court of opinion to be feared by more than one research firm.

Babcock is *Computerworld's* technical editor. His MCI Mail address is 375-2737.

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David Coursey

Serious business



The common view of Microsoft is of a company with an MS-iah complex, looking to populate every electronic gimmick, gadget and gizmo with its own software to the absolute exclusion of 1s and 0s creatively arranged by anyone else.

That viewpoint, besides being widely held, is also a pretty fair assessment of the "I'm on a mission from God" seriousness with which some Redmondians address their tasks. The whole mess would be insufferable, save for the inconvenient truth that Microsoft has unquestionably done more for its customers than any other company in the industry.

Some, however, would venture that this hard work and drive purposefulness has been at the expense of a sense of humor, necessary to lighten the hard times and maintain perspective during a boom.

Less on pitchman?

When, for example, MS-DOS 6.0 went sour at a most inopportune moment on the eve of the advent of Windows NT, the best course might have been to hire Jay Leno to do some funny spin-control TV commercials. "If you lost data because of DOS 6.0, my friend Bill here (points at a life-size cardboard cutout of Gates) will be happy to send you some of his data to replace yours. Just tell us what you want. Important-looking spreadsheets? Word processing documents? We'll FedEx them right away and include an autographed Bill-the-Gates BMP wallpaper file, a set of Gates BMP and three tickets to the Super Bowl merely as our way of saying, 'Thanka!'"

But instead of a good-natured admission that something had gone awry, some folks at Microsoft went ballistic, and we were treated to spin control worthy of the Nixon White House. And it was about as effective. After all, it isn't like they hadn't already lost a DOS release

Courtesy, page 44

NBC stations tune in to PC use

'Operation Peacock' brings TV stations' sales and marketing teams up to speed

By James Daly
WASHINGTON, D.C.

They slipped quietly into the offices of WRCTV one Saturday, quickly securing the main conference room and unloading the tools they would need to take over. The sales department was the first to be hit, followed by marketing. Soon the whole place would feel their presence.

A terrorist attack? Far from it. This precision effort was part of "Operation Peacock," an ambitious effort by the NBC TV Stations' information technology group to make the PC a vital and productive tool in several key departments.

"We couldn't afford to be an outlier anymore," said Joe Harris, director of information technology at NBC TV Stations, a division of the National Broadcasting Co. "We have to take our heads out

of the sand. If you use technology appropriately, you become a whole new company."

Harris flips through a jagged stack of memos on a borrowed desk. "We told them that this is no longer your desktop," he said. He pointed a finger at the computer screen: "This is."

Operation Peacock targets the sales and marketing divisions as well as key department heads of the six NBC-owned TV stations in New York, Washington, Miami, Chicago, Denver and Los Angeles.

Harris was not dealing with complete computer illiterates, but he had a lot of what he calls "may-bees."

"Maybe they knew how to call up E-mail, maybe they could get into a word processing package," he said. "Or maybe not."

Operation Peacock had its genesis in the summer of 1991. A grow-



Joe Harris says psychological barriers are hardest to clear



Challenges: To build and train advertising sales, production and marketing departments employees into efficient computer users.

Technology: Apple Computer, Inc., Microsoft, Inc., developed with CD-ROM drives, Macintosh Quadra line and spin.

Goal: To improve sales staff productivity by at least 10%.

ing proliferation of PCs, coupled with a move by TV stations to cut costs, had intersected with a directive from NBC's chairman to make it as easy as possible for customers to do business.

Assisted by his peers at parent company General Electric Co., Harris and a two-person team spent six months exploring the neither reaches of GSE, Windows and Macintosh environments. When the smoke dissipated, the Macintosh emerged a winner.

"We had cleared our first hurdle, but we still had a very long road ahead of us," he said.

Harris, a 35-year industry veteran, knows that there are usually two ways people respond to change: kicking and screaming. The psychological barriers would be the hardest walls to clear. "PCs have been around for 15 years, and we still trying to convince people they are great."

With limited manpower and stations scattered throughout the country, it would be impossible to get everyone up and running at the

NBC, page 42

PC demand

HP battles backlog

By Michael Fitzgerald
SUNNYVALE, CALIF.

Hewlett-Packard Co. has capitalized on its ability to ship PCs when its competitors cannot, making its PCs the ones dealers recommend when they cannot get product from demand-waterlogged IBM PC, and Compaq Computer Corp.

But HP has hit the same problem as its much larger competitors. "Basically, demand has outstripped our supply, and it will take us a couple of months to completely catch up," said Boris Elisman, HP product marketing and programs manager for desktop PCs.

Elisman said the backlogs were caused by swelling demand and by a shift in product lines. He stressed that HP was already catching up to demand and would outproduce its order rate this month.

While HP's backlogs are surprising, given the company's strategic emphasis on its ability to supply product, analysts developed their impact, if HP is in fact catching up with demand.

"A temporary backlog at this time of year isn't going to break their momentum significantly, so long as they're in position to deliver product in the critical fourth quarter," said Bruce Stephens, director of PC hardware pricing

Growth chart

HP has increased its shipments by as much as 150% in the past year.

and research at International Data Corp.

The demand affects all of HP's new products to varying degrees. HP said it will catch up to demand on its M, XM and VL lines by the middle of the month.

However, Elisman said HP does not expect to catch up on its 486X and N1 products until October. Its new OmniBook 300 portable is also backlogged.

Microsoft puts focus on client/server

By Christopher Lindquist

Microsoft Corp.'s Consulting Services Group is tightening its focus on the roots of client/server development in an attempt to build client/server momentum from the ground up.

The consulting arm will now concentrate on the architecture and design of software using Microsoft tools instead of actually developing the "meat" of an application. The group will also offer "re-engineering" services to companies that want to rebuild their organization as well as their software. "As we go forward, we're going to really emphasize the architecture and design services," said Bob McDowell, vice president of Microsoft Consulting Services.

Several programs are available, including the following:

- **Architecture and Design:** services for client/server applications created using Microsoft products and platforms.
- **Information Technology and Information Systems:** re-engineering of applications that will derive the most benefit from client/server technology.
- **Methodology and Tools:** information concerning practices and tools used by Microsoft Consulting Services for client/server development.
- **Knowledge Transfer:** assistance for developers in enhancing their coding skills for client/server applications.

"We're listening to what corporations want," McDowell said — not just help developing their code but also in performing tasks such as redesigning work spaces and evaluating organizational structure.

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Power outages

Utility switches on automation lights

By Michael Fitzgerald
GREENSBORO, PA.

The last thing a power company wants is to have its customers lose power.

But it happens all the time—a tree falls on a line or, worse, a storm strikes,

causing major power outages.

The storm issue is huge, as those events can render thousands of homes and businesses powerless. At Allegheny Power System (APS), which provides service for three utilities, the goal is to use technology to improve response time in

crisis situations. Currently, its three operating companies, The Potomac Edison Co., Monongahela Power Co. and West Penn Power Co., write power-outage reports manually on cards and route the cards to a dispatch center, which tries to sort through the cards to see which areas

need the most help.

The utilities service 1.5 million customers spread out over five states and 29,000 square miles. A major storm might generate as many as 12,000 cards for a single one of APS' 34 divisions, or four-fifths of its yearly total.

"A violent storm will generate almost an overwhelming number of calls, and it's an enormous task for dispatchers to figure out where to send the crews because you want to restore power to the maximum amount of customers in the minimum amount of time," said Maryann Revers, a systems analyst at APS.

To meet the challenge, the Allegheny power companies are spending some \$2 million to

implement Trouble Call System and Crew Management from M3i Systems, Inc., a subsidiary of Canadian power supplier Hydro-Quebec.

APS wants to use a subset of M3i's PC-based

command-and-control system to automate its problem tracking and crew dispatching over its territory.

Since 1960, APS has been tracking the best ways to go about this and has come up with six criteria, among them the ability to report outage statistics, analyze calls to find the trouble source and track outage crews. It picked M3i because "we needed software that would function with any amount of data and still provide benefits," Revers said. "We can grow with it as we improve our models."

APS expects that even the basic software will help make its call-tracking and outage reporting more efficient. Its three operating companies have separate operations (information systems is central-

ized at the holding company), and two of them do not have computerized models of their circuit breaker locations, which are necessary to run the more sophisticated modeling features in M3i's software. Potomac Edison does have the model and will use the dispatching aspects of the software as well.

Meanwhile, APS is focusing on customizing the application for each of its operating companies. All three pilots will roll out in the fall, according to Revers.

M3i's application set is a DOS application that APS will run under OS/2. Revers said she expects the operating companies will use up to 126 Intel Corp. 80386 and 1486-based PCs, split roughly into 96 dispatcher's stations and 100 call-taking stations. These stations will link into the corporate mainframes to give users split-screen access to corporate data as well as to the M3i-based data.



APS' Maryann Revers says, "We can grow with [M3i]"

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Equitable extends Windows to regional sites

Insurance company to install 7,000 to 10,000 PCs worldwide

By Michael Vizard
NEW YORK

After mastering the intricacies of migrating from DOS to Windows at its corporate headquarters, the Equitable Life Assurance Society is now undertaking an effort

to convert its field agents from stand-alone DOS systems to Windows systems that will be linked over Equitable's proprietary network.

According to David Chan, Equitable's director of technical standards, the company plans to deploy about 150 prototype

systems running Windows on Intel Corp. 486-based 33-MHz PCs as part of its initial test phase. Using data drawn from this program, Chan said he expects to have a pilot project in place by year's end.

All told, Chan said he expects to install

anywhere from 7,000 to 10,000 PCs in regional offices throughout the world as part of an overall effort to tightly integrate Equitable's business operations. Those systems will run Novell's groupware in addition to a variety of other Windows applications, Chan said.

To support this effort, Equitable has created a 12-member SWAT team whose primary function is to respond to disasters. But as far as day-to-day support goes, Chan said it is not really expecting any support issues beyond the ones he already has. "All the applications are basically a point-and-click interface," Chan said.

After upgrading regional offices, Chan said, Equitable will have completed the transition from DOS to Windows.

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NBC stations

CONTINUED FROM PAGE 37

same time. The decision was made to stagger the installation: settle into one site and complete the project there before moving on to the next.

Harris enlisted a half-dozen technical assistants who moved into each site city for the 10 to 12 weeks needed to get everyone up, running and comfortable. "Joe's gypsies," he calls them.

The cost of installation was not going to be cheap. Harris estimated spending about \$400,000 per station. "But that's nothing compared with the cost of technologically falling behind," he said.

The first station to undergo the transformation was WMAQ in Chicago. Harris and his gypsies spent 12 weeks living in the Windy City, teaching WMAQ salespeople how to use their new Macintoshes to organize sales accounts, facilitate billing and communicate more effectively. Within weeks, productivity in the sales department was up 10% and computers were an integral part of life.

It has not always been easy. At the first class, Harris is usually met with crossed arms and skepticism. He counters with "a real showbiz style" that includes pep rallies, hockey signs, newsletters, free games — whatever it takes to make learning fun.

Soon the training wheels come off. By the end of the fifth day, everyone using Macintoshes has to communicate by electronic mail. "Like a good parent, you have to build the habit for them," he said.

After the main team departs, a part-time hire remains for user support. An original installation team member will return to each site for a minimum of one week each month until the end of the year.

The installation pace has been swift. WTVJ in Miami was done this spring. Only 10 short days after they boarded home-bound jets from Miami, the gypsies once again packed their bags and headed for the nation's capital. KNCN in Denver is expected to be set up in early fall, and all six stations are scheduled to be complete by the first quarter of 1994.

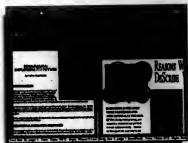
"Then can the gypsies rest," Harris said.

Mere

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PC Magazine had these words to say about DeScribe® Word Processor 4.0 for OS/2®—"It...performs amazing acrobatic feats of editing and display that leave rival programs gasping in envy."

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PC Week wasn't exactly at a loss for words either. They said DeScribe "sets the standard for OS/2 applications by taking excellent advantage of the operating system's advanced features."

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thrives in the Workplace Shell®. Print an unopened document, copy it to the clipboard or paste it directly into another document simply by dragging the DeScribe document object and dropping it on the appropriate custom tool icon. DeScribe's 32-bit architecture is designed to give it a performance advantage over 16-bit Windows® programs. And with OS/2's multithreading and true pre-emptive multitasking, DeScribe can perform several tasks simultaneously while operations in other applications are underway.

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Coursey

CONTINUED FROM PAGE 37

(remember 4.07) to unforeseen elements of the feature set. And, wonder of wonders, Microsoft survived and continues to grow quite nicely.

It is better, I think, to level with your customers, even at the risk of flying in the face of the spin doctors' and image mak-

ers' external portrayal of Microsoft as a company too smart to make big mistakes, like screwing up when it finally decides that operating system utilities aren't such bad things to offer after all.

Southwesterners spread
This lack of good humor is spreading across the industry. It's not quite the same when some of our industry's top CEOs/raconteurs stop telling Microsoft stories in public for fear that either

someone will get miffed and decide to re-target a few million marketing bucks against the offender's company or Microsoft's Department of Turning the Tables will somehow make the errand competitor live to eat his words in a most public venue. I am not accusing; by the way — just reporting on the chill I sometimes encounter.

It would be wrong, however, to blame a lack of industry mirth on Microsoft. Two smaller companies are, in fact, working

hard to earn the top spot in Mr. Coursey's Register of the Pretentious, where Microsoft's self-seriousness isn't nearly as unctuous as that practiced by start-ups 3DO and General Magic.

General Magic is trying to convince the world that its Magic CAP GUI environment for palmtops and Telescript messaging encapsulation languages are cool enough to change the world — without bothering to show them around very much. It is worth remembering that these are some of the same folks who brought HyperCard, another supposedly earth-changing technology, out of the laboratory and into shelfware.

3DO, fueled by the mesmerization skills of Trip Hawkins — who is supposed to be as good at not letting reality get in the way of a good vision as Steve Jobs was in his prime — has managed to persuade Wall Street to pony up an incredible \$200 million-plus market cap for a company that so far has only lost money. And 3DO's product? A low-resolution, but very fast, graphics toy for the home whose chief selling feature seems to be that it might beat Nintendo's and Sega's new products to market by six or nine months. But be careful: Don't call this a games machine, or 3DO will slap your hand and remind you this is an "interactive multiplayer" you're talking about.

Apple gets a special mention for its plan to introduce Newton at MacWorld after steadfastly avoiding the plebeian computer shows for the latter series of the Consumer Electronics Show throughout the hype phase. Are they afraid a less familiar crowd might not be suitably impressed?

Tops them all
But topping out the habers index is the company that two weeks ago sent me a nicely printed invitation to a product introduction at a swank hotel down in Silicon Valley. Besides the date, place and time, the invite also announced that signed nondisclosure agreements would be required for admittance and viewing of the grand new product.

"Gee, this must be really important if they want an NDA," I guess I was supposed to say to myself.

I am sure it was a real letdown to many attendees: Not only did the offender not hold a signing ritual, but a press release also went out before the event even took place. And they say Microsoft has nerve.

Coursey is editor of "P.C. Letter," a San Mateo, Calif., industry newsletter. The MCI Mail address is 555-4490.

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Software application packages

Campbell Services, Inc. has started shipping OnTime Versions 1.5 (Windows) and 2.5 (DOS), an upgrade to the company's personal calendar and group scheduling software.

Key calendar features for OnTime in-

clude date range selection and alarms, recurring events and an import/export facility. The product also offers the ability to automatically configure and maintain the correct desktop-to-palmtop communications settings, according to the company.

Both versions can print all appointments or just critical events.

OnTime Windows Version 1.5 costs \$129.95, and the DOS Version 2.5 costs \$69.95.

► Campbell Services

Suite 1070
21700 Northwestern Highway
Southfield, Mich. 48075
(313) 559-5065

User Solutions has introduced Inventory Analyst Professional, a spreadsheet-based program.

A tool set is provided with the product to help users build accurate purchase or production plans, reduce inventory costs

and maximize cost savings.

Features for Inventory Analyst Professional include "best fit" forecasting, a planning technique called "ABC" analysis that ranks and groups items by dollar volume and batch planning for hundreds or thousands of items, according to the company.

Inventory Analyst Professional costs \$495, and it offers templates that operate concurrently with Unix, DOS, OS/2, Windows, Macintosh. Microsoft Corp.'s Excel, Berkeley International, Inc.'s Quattro Pro and Lotus Development Corp.'s 1-2-3.

► User Solutions
11008 Tillson Drive
South Lyon, Mich. 48178
(313) 695-1804

Utilities

Verticeo Systems, Inc. has announced SpaceManager Version 1.5, a data compression utility.

According to the company, the product gives MS-DOS 6.0 and Windows users up to 40% more disk space than can be gained through MS-DOS 6.0 DoubleSpace.

The product also offers SelectCompress, SuperExchange, SpaceMonitor, SuperMount and PartitionTiler, which are modules designed to simplify file management. Installation takes less than five minutes, and operation is transparent to the user, the company reported.

SpaceManager costs \$49.95 through Nov. 15 and includes both 5V- and 3V-in. disk media.

► Verticeo Systems
Fourth Floor
Transamerica Pyramid
600 Montgomery St.
San Francisco, Calif. 94111
(415) 356-5800

Symantec Corp. has announced The Norton Essentials for PowerBook Version 1.1.

According to the company, Version 1.1 consists of a suite of utilities designed to improve Apple Computer, Inc. Macintosh PowerBook performance by enhancing productivity and usability, maintaining synchronized files, increasing battery life and providing battery gauge compatibility for the PowerBook 190C, 1450 and 195C.

The Norton Essentials for PowerBook 1.1 can extend the life of a battery charge by an average of 40% or more. Features such as battery saver, backlight dimmer and instant access for AppleTalk allow users to adapt battery use to different power conditions.

The utility package also can automatically disable/reconnect AppleTalk with Instant Access. The Norton Essentials for PowerBook Version 1.1 runs on any Macintosh PowerBook and PowerBook Duo. It requires System 7 or higher.

The product costs \$129.
► Symantec
10201 Torre Ave.
 Cupertino, Calif. 95014
(408) 353-0900

More new products, page 48

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So when you think about your next IT purchase, think about the investment IT is making in the future of your business. Information Technology — keeping America a world leader in commercial markets. Count on IT. To learn more about the Information Technology industry, contact ITAA at 703-284-5326.

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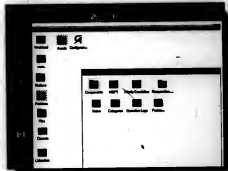
CA-Unicenter for OS/2 builds on the reliability, stability and productivity of mainframe systems management, taking full advantage of the expertise and technol-

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ogy gained from more than 15 years experience. It combines industrial strength security management, work load management, problem management, console management and file management into one powerful, unified solution. And since it brings many familiar management features from your mainframe, CA-Unicenter for OS/2 protects your existing staff and reduces the need for new staff, making it a highly cost-effective solution, too.

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Macintosh products

Business Objects, Inc. has announced BusinessObjects for the Macintosh, a business-intelligent decision-support solution.

According to the company, the product uses the Macintosh's proprietary pro-

gramming interface to support its native look-and-feel features.

Macintosh features such as "publish and subscribe" are supported, and BusinessObjects for the Macintosh is compatible with BusinessObjects for Windows. Users can share reports, graphs and queries.

Report and graph generation capabilities are also provided for data returned by an end-user query, the company said. BusinessObjects for the Macintosh is

currently available for Oracle Corp. and Sybase, Inc. environments.

The end-user version of BusinessObjects for the Macintosh is called the User Module and costs \$265. The database administrator version costs \$3,485 and is called the Manager Module.

► Business Objects

Suite 240
2500 Sand Hill Road
Menlo Park, Calif. 94025
(415) 854-1500

Orange Micro, Inc. has introduced Version 2.0 of its OrangePC MS-DOS coprocessor.

According to the company, OrangePC is an Intel Corp. 80386- or 1686-based coprocessor card designed for Netware-based Macintoshes.

Users can simultaneously run Macintosh or PC programs on the same platform, the company said. Enhancements include Macintosh/DOS copy and paste, Macintosh/DOS shared volumes and PostScript printing.

Prices begin at \$1,099.

► Orange Micro

1400 N. Lakeview Ave.
Anaheim, Calif. 92807
(714) 779-8772

Peripherals

Xerox Corp. has introduced the Xerox 4700 II Color Document Printer, a next-generation laser printer.

Features for the product include Adobe Systems, Inc.'s PostScript-based color printing; added Tolen Ring and Transmission Control Protocol/Internet Protocol connectivity to its existing Novell, Inc. Ethernet and Apple Computer, Inc. AppleTalk support; support for Hewlett-Packard Co.'s PCL5 page description language; job accounting for internal auditing and billing control; larger image disk; larger system disk; and improved performance in the Xerox Escape Sequences print mode.

According to the company, the product also has an industry standard 60-MHz Intel Corp. 486DX main processor and an Extended Industry Standard Architecture bus. It can perform auto-emulation switching between PCL5 and PostScript.

The 4700 II is available in its standard configuration for nonnetworked remote host connections for \$45,150. The 4700 II with its network Page Description Language option, including PostScript, PCL5 and HPGL emulations, will be packaged together for \$48,150.

► Xerox

800 Long Ridge Road
Stamford, Conn. 06904
(203) 968-3000

APS Technologies has started shipping the T 540, a hard drive with 324.8M bytes of formatted capacity.

The drive was designed for use with all Apple Computer, Inc. PowerBooks and has a 19mm, 2 1/2-in. form factor with sustained Small Computer Systems Interface transfer rates as high as 12M byte/sec.

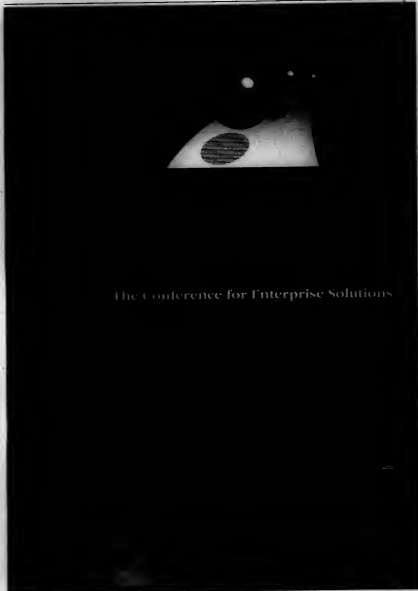
The product has an average access time of 26 msec and an average seek time of 11.3 msec, according to the company.

The internal version costs \$799. The external version is equipped with an APS Companion case constructed for portable AC and/or battery operation with PowerBooks.

The AC-only version costs \$859, and the AC/DC version costs \$929.

► APS Technologies

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Power has its price.

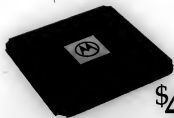
That price is low, as in personal computers priced under \$2500 that are faster than any PC on the market today. You see, PowerPC[™] Microprocessors from Motorola not only deliver significantly more power than the Pentium[™] Microprocessor, they deliver it at a fraction of the cost.

The reasons are quite simple. Through Motorola's superior design and manufacturing technology, we've packed more power into fewer transistors. We deliver that power on a chip that's less than half the size (120 square millimeters vs 262 square millimeters).

	total transistors	transistor count
PowerPC [™] 601e	60	60
PowerPC [™] 601	64.5	>60
PowerPC [™] 603	94.5	>90
Pentium [™] (initial core)	294	294
Intel [™] Pentium [™]	3.04	3.04



*Power comparison is based on the estimated total price for a 1,000 piece quantity of the 601e/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000.



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Navy puts documents on-line

By Michael Vizard
MCLEAN, VA

The U.S. Navy is in the midst of an effort to put all the documentation required to support the Mission Display Systems of the Tomahawk cruise missile system on-line aboard vessels.

With an eye toward simplifying one of the most important mission-critical systems in its arsenal, the Navy has contracted systems integrator PRC, Inc. to build an electronic document delivery system based on the DynaText software developed by Electronic Book Technologies, Inc. in Providence, R.I.

The first ship to adopt the new system, which is based on the Standard Generalized Markup Language (SGML), was the aircraft carrier USS Abraham Lincoln. Following the USS Abraham Lincoln were the aircraft carriers USS America and USS Bessie.

The Navy has added the DynaText software to 26 systems on board the aircraft carriers as well as additional shore sites in Europe, the Persian Gulf and the U.S.

The driving force behind the move to an electronic document delivery system is the need to reduce the amount of paper required to support on-board systems, while also providing a tool that will allow

the Navy to update those systems electronically, according to Dennis Rozanski, a logistics engineer at the Naval Electronics Systems Engineering Activity Detachment in Philadelphia. The first paper document to be converted into an SGML format is a 200-page reference manual used by mission planners for the Tomahawk missile.

The DynaText software is being adopted because the Navy required PRC to come up with an electronic delivery sys-

tem that could run on both Windows and Unix platforms running the Open Software Foundation's Motif interface under the X Window System, said Peter Wakytyma, an on-line support specialist at PRC.

"We also needed the ability to annotate documents on-line, while providing a look and feel that was consistent with other applications," Wakytyma said.

DynaText uses SGML to add tags that simplify searching and browsing standard ASCII text documents.

Park City

CONTINUED FROM PAGE 55

ward renting and consolidating large numbers of forms for reporting and analysis.

For example, a tool to create cash sheets can be mated with another tool that consolidates the cash sheets and generates exception reports when figures are out of balance.

Paperless Management comprises about 25 mix-and-match modules covering such diverse areas as messaging, sales forecasting, time and attendance, executive information systems, production, lease management and auditing.

Disney Stores, Inc. in Glendale, Calif., signed on to the first version of Paperless Management four years ago and has stayed with it while Disney has grown from 36 to 220 stores, said Bill Macfarlane, vice president of information services.

Disney uses Paperless Management to distribute customized personnel and reporting forms as well as electronic mail to its stores each week. It also polls each store daily to upload receipts and completed forms for consolidation and analysis at headquarters.

The major benefits are "clarity and consistency," Macfarlane said. "Everyone gets the same message in the same fashion at the same time." And because company procedures, policies and manuals are built into the forms that are delivered, "We get our people out of the back room and onto the floor where they should be," he said.

Fields said the system is aimed at companies with 50 or more outlets or field offices. The software is operating system-independent, an accommodation that he said does not seriously impact performance. Although pricing was not announced, Fields said a typical retail store could be outfitted with about a dozen software modules for \$3,000 to \$4,000.



Compaq empowers employees

CONTINUED FROM PAGE 53

etaria-style" benefits program, in which employees are given a fixed stipend to spend as they choose on an array of benefits options.

Compaq hopes the new system will enable the company to move to the flexible but complex program with no increase in

administrative support costs.

During an enrollment period this fall, employees will interactively craft their benefits packages through a PC-based system that prompts them for information about themselves and dependents and guides them through a menu of choices. They will see at the bottom of the screen an available-balance field that

tells them how many of their benefits dollars have been allocated to chosen options and how many remain. When the budget runs dry, the system will notify the user of payroll deductions that will be established.

Easy enrollment

Instead of using a PC, an employee may enroll in the flexible benefits plan via a telephone front-end system from AT&T that uses Touch-Tone input and automa-

ted voice response to capture, validate and read back enrollment information.

According to Joel R. Lapointe, president of Esamee Systems, an employee could enroll at home by phone, then check his enrollment data on a PC at work. Or he could enter the data at work, then listen to his enrollment choices later at home.

In either case, once the enrollment period has ended, the system crosses transactions and passes them to Compaq's Collier-Jackson, Inc. payroll system, which—like the old personnel system—runs on a Hewlett-Packard Co. HP 3000 computer.

Nearly all Compaq employees have PCs attached to the company's worldwide Banyan Systems, Inc. fiber-optic network. The personnel system will be able to support as many as 2,000 simultaneous users, Miller said.

The Esamee application software and the employee database are kept on separate Compaq SystemPro 486/33 servers attached to the network. The two machines will run Microsoft Corp.'s Windows NT and will serve users in each of the company's 20 campus buildings.

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LAN hardware

Xircos, Inc. has introduced Xircos Netware technology.

According to the company, Xircos Netware technology is the first truly cordless approach to local-area networking. The Xircos Netware protocol line includes the Xircos Credit Card Network Adapter (a Personal Computer Memory Card International Association Release 2.0-compliant Type II card).

For high-speed operation, the Xircos Pocket Network Adapter supports Enhanced Parallel Port data transfers and is connected to the computing device through the parallel port, the company said.

The Xircos Netware Access Point for Ethernet provides the cordless link between a Xircos Netware LAN and a wired IEEE 802.3 Ethernet LAN.

Both the Credit Card Network Adapter and the Pocket Network Adapter cost \$498. The Xircos Netware Access Point for Ethernet is priced at \$999.

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Enterprise Networking

DEC KEEPS PUSHING
DECNET/OSI, 6a

Network technologies step forward

By Lynda Radosevich

A recent rush of activity in several quarters, coupled with positioning efforts by some vendors, offers users a strong indication of how evolving networking technologies may best be used.

What is emerging is a picture of corporate networks that will support several network technologies, including Fiber Distributed Data Interface (FDDI), Asynchronous Transfer Mode (ATM) and 100M bit/sec. Ethernet — each optimized to support particular classes of applications.

For instance, 100M bit/sec. Ethernet or FDDI is good for high-volume file transfers because their data packet formats, which vary in size, are appropriate for transferring data files, which also vary in size. Here, delays of five seconds or more are acceptable, according to Jim Jones, product marketing manager for advanced networking at National Semiconductor Corp.

Conversely, applications such

What's new in networking					
Matching applications to specific network technologies is becoming clearer					
Application	Variable	High	Packet	FDDI, small bit/sec. Ethernet	
File transfer	Small files	Low	Call	ATM	
Transaction processing	Small files	Low	Call	ATM	
Publishing	Large files	High	Packet	FDDI, small bit/sec. Ethernet	
Medical imaging	Large files	High	Packet/Call	FDDI, ATM	
Voice/data	Large files	High	Packet/Call	FDDI, ATM	
Low-bandwidth video	Low-bandwidth	Very low	Fixed-length packets	Asynchronous Ethernet, FDDI-II	
High-bandwidth video	High-bandwidth	Very low	Call	ATM	

Source: National Semiconductor Corp., Santa Clara, Calif.

as desktop videoconferencing will be better suited for use with emerging "isochronous Ethernet," FDDI II or ATM networks. This is because the continuous transfer of information and the need for steady, immediate delivery are better suited to these technologies' fixed-size data packets

and cells, according to Jones.

Users generally applauded the positioning because it will help them decide where to deploy new networking technology. Some said they expect to support more than one of the new networks and are beginning to make choices already.

At the Texas Children's Hospital in Houston, for example, network manager Randy Cosby said he plans to install FDDI networks for medical imaging by year's end. He will use 100M bit/sec. Ethernet and meet the file-transfer needs of record management personnel.

But in order to fully evaluate these efforts, benchmarks are needed to provide a yardstick for determining which networks are best for particular applications, said Marty Paika, principal networking analyst at Dataquest, Inc.

To meet that need, the Multimedia Communications Forum will meet Aug. 23-24 in San Francisco to match applications with the services and to establish benchmarks.

For example, networks that support desktop training videos might have to supply 1.5M bit/sec. to each node with less than a 5-sec. delay, said Dave Van Vorstis, the forum's president.

However, the forum will not tie Net technologies, page 60



Going down

National Semiconductor's components for holding FDDI network devices for copper cabling allowed \$5.00 per port, down from around \$5.00 per port for their FDDI connection, said George Prange, a product manager at N.S.C.

NetWare shops gain PC-based option for internetworking

By Jeanie M. Wexler
BOSTON

■ A low-end option for internetworking Novell, Inc. NetWare sites emerged recently from Texas Microsystems, Inc.

The maker of ruggedized PCs for industrial environments is shipping its \$3,465 to \$10,500 NetGen series of Intel Corp. 486-based platforms. The 20-slot PCs can be configured as wiring hubs, novel routers, asynchronous wide-area communications servers, file servers or any combination of these functions, said Richard Spangler, product marketing manager.

The resulting "internetwork server" as Texas Micro has dubbed the product line, can be managed by NetWare's Hubcon administrative service and high-level NetWare Management System. Spangler said the NetGen series is aimed at providing a "more appropriate hardware foundation for Novell software."

The Industry Standard Architecture/Extended Industry Standard Architecture platforms allow NetWare shops to choose from competing network vendors' PC communications interfaces, such as Newport Systems, Inc.'s asynchronous PC adapters, rather than being

locked into buying proprietary cards from hub vendors for their own platforms. Spangler said.

He estimated that the approach could save users half the cost of specialized router and hub communications equipment.

"As increasing numbers of smaller companies or large firms with many small sites internetwork LANs, the more in demand lower cost solutions are becoming," said Matt Cain, an analyst at Meta Group, Inc. in Westport, Conn. "This usually means something internal to a PC."

Cain said that hardy Texas Micro PCs do not have the same degree of fault tolerance as many proprietary hub platforms, such as those from market leaders Cabletron Systems, Inc., Synopsys Communications, Inc., 3Com Corp. and others. However, "for most applications, [the Texas Micro platform] is adequate," he said.

Texas Micro will ship the PC-based internetwork server from the factory, configured with the customer's interfaces of choice. Modules available include Ethernet and Token Ring adapters with NetWare drivers; X.25, frame relay, asynchronous and Integrated Services Digital Network wide-area network links; fax and modem cards; and Novell's MultiProtocol Router software.



Hypercom targets branch offices

By Elisabeth Horwit
PHOENIX

A growing number of products on the market are targeting small sites that need a low-cost way to do a little of several types of communications: fax, local-area network internetworking, voice and perhaps IBM Systems Network Architecture (SNA) as well.

"These are what you would broadly classify as branch-office products for companies whose offices only communicate with headquarters and have a low level of traffic for any one type of transmission: voice, fax or LAN," said Tom Nolle, president of CIMI Corp., Voorhees, N.J., consultant. Such sites cannot afford to install a separate hub for each type of communication.

Recent vendors to release such an offering are Texas Microsystems, Inc. (see story at left) and Hypercom, Inc. Hypercom plans to officially announce in late August its Integrated Enterprise Network, a family of multiprotocol internetworking devices that reportedly support a variety of networking protocols.

The data protocols supported

are IBM Synchronous Data Link Control (SDLC)/SNA, conversion of SDLC to Logical Link Control/2 for transmission over a LAN, routing of Transmission Control Protocol/Internet Protocol and Novell, Inc.'s IPX. Hypercom said.

Also supported are voice, video and popular wide-area networking standards such as frame relay and X.25. The products range in price from \$1,950 to \$32,500. What differentiates Hypercom from the old time division multiplexers (TDM) is that its boxes use a combination of TDM and packet switching to allocate slots between voice and data applications on a dynamic basis, Nolle said. Asynchronous Transfer Mode devices perform the same type of dynamic bandwidth allocation; however, they are not cost-effective for the low bandwidth needs of small sites.

Hypercom's boxes do support enough routing to eliminate the broadcast storms to which bridges are prone, Nolle said. However, they were designed as "border devices" and lack both the breadth of protocol support and the power of a full router from a company such as Cisco Systems, Inc., he added.

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Network technologies step forward

CONTINUED FROM PAGE 57

the specifications to particular technologies such as ATM, said Van Voorhis, who is also a manager of multimedia network subsystems at IBM.

Participants include Apple Computer, Inc., Ascom Timeplex, AT&T, IBM, National Semiconductor and Siemens AG.

Skeptical

At least one user said he is skeptical about supporting separate networks for different applications.

"I would say you go with the fastest. If costs are in line, why bother mixing all the protocols and giving yourself all the headaches?" asked Mark Gleson, senior network analyst at PMA Reinsurance Corp. in Philadelphia.

Others said FDDI is the only new technology that is standardized and sufficiently mature today, and they will not need to choose between the network options until 1995 or so when others are more mature.

Meanwhile, among the developments

users should be watching are the following:

- Standards committee progress on isochronous Ethernet—a networking standard that separates voice/video traffic and data traffic—proposed by IBM and National Semiconductor (see story below).

- Near completion of FDDI II, an extension to the FDDI standard that supports isochronous voice/video traffic.

- A National Semiconductor announce-

ment of new low-cost transceiver and silicon products for FDDI over data-grade unshielded twisted-pair cabling, as well as a commitment from 10 networking vendors to deliver products based on silicon.

- An announcement by several major networking vendors to push ahead with standards efforts by jointly developing specifications for 100M bit/sec Ethernet based on a proposal by Grand Junctions Network, Inc.



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DEC promotes DECnet/OSI despite low U.S. demand

By Craig Stedman
MAYNARD MASS.

Digital Equipment Corp. continues to actively develop and market its DECnet/OSI backbone networking software supporting the Open Systems Interconnect (OSI) standard, but analysts still see little demand for that technology as a

transport mechanism in this country. DEC last month introduced second releases of DECnet/OSI for both VAX systems running OpenVMS and Alpha AXP machines with DECnet/OSI. An OpenVMS version for Alpha also remains under development, although the company said its introduction has been delayed from the second half of this year into 1994.

But is anybody out there listening? In the U.S. at least, several analysts said only a few large customers are tuned into the OSI message; the great mass of users is sticking with the Transmission Control Protocol/Internet Protocol (TCP/IP) transport, they added.

"OSI is hardly worth a breath," said Todd Dagros, vice president for commu-

nications research and consulting at the Yankee Group consultancy in Boston. "I appreciate their persistence, but [DECnet/OSI] is a dead horse." Only 5% of the top 1,000 U.S. companies are using OSI, "and even there it's less than 10% of the traffic," Dagros said.

The earlier DECnet Phase IV proprietary backbone "was probably the last widespread DECnet architecture we'll see out there," said Frank Dumbek, president and chief executive officer at Communications Network Architects, Inc. in Washington, D.C.

OSI is more popular as a transport in Europe and Japan, noted Thomas Galloway, president of GCE Consulting, Inc. in New York. "But I get the feeling the rest

OSI additions

DEC has introduced new versions of DECnet/OSI for OpenVMS VAX and DEC OS/1 AXP.

Product	New features
DECnet/OSI v3.4 for OpenVMS VAX (available now)	• Supports multiple DECnet Phase IV specifications over OSI transports.
DECnet/OSI v3.4 for DEC OS/1 AXP (available in August)	• Supports full OSI specifications suite. • Allows OSI applications to run over TCP/IP transports.

of the world will probably follow [the U.S.] onto TCP/IP." The important parts of OSI now, he said, are applications such as X.400 messaging and X.500 directory services running over TCP/IP.

Slow to move

Mary Ellen Porter, DECnet/OSI marketing manager at DEC, acknowledged that commercial users in the U.S. are "not moving as quickly as some others to an OSI base." Customers here are mainly interested in getting access to OSI applications from their existing transports, she agreed.

The new Version 1.1 of DECnet/OSI for DEC OS/1 AXP adds support for running all OSI applications over TCP/IP, Porter said.

DEC is also "seriously looking" at adding TCP/IP support to DECnet/OSI for OpenVMS, but the company sees less need for it there because OpenVMS users are more likely to use DECnet Phase IV as a transport, she added.

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Outsourcers: Saviors or charlatans?

By Mark Halper

While outsourcing can save information systems shops money, many chief information officers are learning they can implement many of the same efficiencies promised by an outsourcer themselves — and save even bigger bucks.

"Outsourcers have marketing expenses and a profit motive," said Ed Barrows, IS executive at Occidental Petroleum Corp., which three years ago rebuffed proposals from IBM, Electronic Data Systems Corp. and Perot Data Systems Corp. in favor of an internal proposal.

And while outsourcers are changing their pricing models to cope with the shift toward client/server technology, their traditional pricing has been based on processing volume, a practice many observers believe is inconsistent with providing deep savings for customers.

"If you charge by volume, it's like a drug addict — get me more volume," observed Ron Fischer, chief executive at Insurance Management, Inc., a Houston consulting firm.

Convincing argument

So when cost is the key in an outsourcing evaluation, IS chiefs can often prove to their bosses that they can do just as good a job as an outsourcer can.

USX Corp. figured out three years ago that it could lower its costs through internal practices and dismissed outsourcing proposals from two vendors.

"We were interested in one thing: Would we save money?" said North Corners, vice president of information technology at USX Engineering and Consulting.

When proposals came in, Connors determined that outsourcing would actually cost USX more — at least 1% more than USX's internal costs.

But if not for some envy negotiating with the outsourcers, Connors may never have concluded that his own costs were low. "We wouldn't tell them what our budget was," Connors recalled. "We said, 'You tell us. We're not going to give you our target.'"

That would be a wise move for any IS executive dealing with proposals from outsourcing vendors, according to Thomas Blittz, president of Compass America, Inc., a Reston, Va., consulting firm that specializes in measuring IS shop efficiency.

"The first thing an outsourcer wants to know about an IS shop is what their

Will outsourcing save money?

YES. However, IS shops could realize cost reductions on their own. Some methods to consider:

- Consolidate purchasing activity — drive volume bargains like outsourcing do.
- Eliminate unnecessary services.
- Eliminate redundant compute functions.
- Consolidate computing operations.

MAYBE. Outsourcing does cut cost more than can be bargained for. Some common hidden costs to avoid by using through contracts:

- Define all types of services — outsourcing profit from providing services deemed extra.
- Define service levels and baseline computing needs to avoid excessive "above baseline" charges.
- Ensure flexible technology options; outsourcing could charge penalties, for instance, for switching applications.
- Negotiate escape clauses that provide for contract termination at reasonable rates.
- Do not disclose your budget to outsourcers during negotiations.

costs are," Blittz said. "And regardless of what they are, they will come back with 20% lower. That's very appealing, but often what an IS shop doesn't realize is that a good spring cleaning will do better than 30%."

The IS folks at Tectron, a Providence,

R.I., conglomerate, understand what Blittz means by spring cleaning. Before Tectron makes any decision in its ongoing outsourcing evaluation, it will most likely consolidate its data centers, a process an outsourcer would otherwise undertake.

"Why let an outsourcer get all the low-lying fruit?" asked Tectron Vice President Cecil Labhart.

At Compass, Blittz disputed a common notion that outsourcers can improve economies of scale by putting a small or medium-size IS shop onto a larger system where it would share space with other IS operations.

While the economies of scale would improve immediately and generate short-term benefits, in the long run, the IS shop probably generates more substantial savings by continuously honing itself.

"A well-run shop should be able to reduce its costs by 20% a year," Blittz claimed.

Use your client

University of Houston business professor Rudy Hirschheim advises IS shops to try to exercise the same kind of bargaining power with hardware and software suppliers that outsourcers wield. Large shops — 150 million instructions per second or more — should have the clout, Hirschheim said.

"Outsourcers like EDS have sound, shrewd business practices. Why can't a reasonably sized IS shop do the same thing?" Hirschheim asked.

One controversial method for cost reduction that no IS shop or outsourcer likes to talk much about is staff reduction.

The decision by Los Angeles-based Occidental to lay off more than half its IS staff played a key role in the company's

decision to retain operations when it evaluated outsourcing proposals three years ago.

Occidental's internal proposal came in \$14 million below the next most competitive offer from any of the outsourcers

that vied for the business — EDS, IBM or Perot Data Systems. Barrows said, it cut annual IS costs from \$33 million to about \$20 million.

The chief contributor to the cost slashing was the overall reduction of Occidental's IS staff from 143 people to 67, according to Barrows.

Hidden costs

While Occidental's shop purge helped slash its IS costs, it also exposed some hidden costs. Barrows said that

suggests an IS shop will save money by transferring its employees to the outsourcer's payroll.

When an outsourcer takes a customer's staffers onto its payroll, it does not do so gratuitously. Rather, the outsourcer figures the cost of paying salaries into the fee it charges the customer.

When USX denied bids, for instance, "the cost of the payroll was built into the quote. It was a matter of whose payroll the workers were on," Connors said.

In fact, Connors pointed out, employee compensation increases can emerge as hidden costs that detract from outsourcing savings. For instance, responsibility for the pensions and benefits of long-term employees who transfer to the outsourcer's payroll may remain with the outsourcing client.

But staff reduction and data center consolidation are critical chores in a spring cleaning, they do not complete the task list. At Occidental, eliminating redundant software and hardware and minimizing site licenses all contributed, Barrows said.

which endured a five-month spell of Chapter 11 protection during the early years of the contract, is a smaller company today, with \$7.5 billion in revenue compared with \$9.5 billion in 1986. But Marquardt said the arrangement has helped Southland avoid costly write-offs of systems it would no longer have needed and also helped it avoid upgrade expenses.

Southland's savings have grown from about 12% in the first year to 22% currently, in part because the firm agreed to less savings up front to help a then-fledgling ACS (take flight, Marquardt said). —Mark Halper

Some customers satisfied

While evidence mounts that IS shops can often generate equal or greater savings on their own, there are plenty of financially satisfied outsourcing customers.

Anticipated savings are right on track at PPG Industries, Inc., according to Sally Wellinger, corporate director of information technology.

PPG handed over MVS data center responsibility to EDS two years ago, even

though a Real Decisions Corp. benchmark showed that substantial internal data center consolidation already had PPG running efficiently compared with other companies of its size.

Wellinger declined to quantify her savings, but she attributed them to two factors: PPG trimmed its payroll, and EDS transferred computer operations to a large Midwest data center that runs with greater economies of scale than did PPG's former shop.

Another happy camper — although it has not always been so felicitous in its outsourcing appraisal — is Southland Corp. in Dallas.

Southland, which owes the 7-Eleven chain of convenience stores its 44-year name, is a 15-year, \$150 million mainframe outsourcing contract with Affiliated Computer Systems, Inc. (ACS). Southland pays about 22% less in IS costs today than it did before entering the arrangement, according to Lee Marquardt, manager of systems hardware operations.

Part of that reduction has nothing to do with any ACS magic. Southland,

D&B gambles on Sybase for sole database

By Craig Stedman
FRANKFORD, MARY

While Dun & Bradstreet Software's strategy of integrating outside software directly into its SmartStream client/server products generally draws applause from analysts and early users, some said the company's embrace of only one relational database could limit its potential market.

D&B Software is building Sybase, Inc.'s SQL Server database into SmartStream as part of its approach to use what it deems "best of breed" software in the emerging client/server line, which is starting to be heated out after nearly two years of talk [CW, July 29].

The tight integration of SQL Server that D&B Software promises is seen by analysts as a possible competitive advantage. On the other hand, they noted that customers who have committed to other databases may decide to pass on SmartStream rather than switch to the Sybase package.

Jennifer Scholz, a software analyst at International Data Corp., a market research firm based here, pointed out that both Oracle Corp. and Informix Software, Inc. currently have larger market shares than Sybase. "A lot of corporations are comfortable with Informix and Oracle," Scholz said. D&B Software "really has to work on getting their software on another [database] platform," she added.

Limiting decision

"They're locked into Sybase SQL Server for a long time," said Tony Percy, vice president of software management strategies at Gartner Group, Inc., a Stamford, Conn., consulting firm. Both Scholz and Percy said they view the use of a single database as SmartStream's one potential shortcoming.

A D&B Software spokesman said the company has a chain backed up plan to support anything other than SQL Server. "D&B Software is looking at the idea of eventually integrating other databases into SmartStream," but there



Growth surge

Market researcher International Data Corp. (IDC) projects that worldwide sales of client/server applications will reach the \$5 billion level by 1997. The client/server market totaled just \$1.6 billion last year, according to IDC.

are no commitments and no dates" for doing so, he added.

Beta-test users of the soon-to-be SmartStream Decision Support 2.0 and Financial Stream 1.0 packages said the Sybase-only approach did not affect them because they had already selected SQL Server as their lead database before settling on SmartStream.

However, they agreed that it may be a concern for other users. "I can see where clients who have experience with Oracle or something else wouldn't want to have to give up on that," said Larry Bried, senior business systems specialist at Euron Operations Corp. in Houston.

"For [D&B], it's probably an issue, but for me it isn't," added Peter Burrows, director of systems engineering at Reebok International Ltd. in Stoughton, Mass. Reebok is "very pleased" with Decision Support 2.0 and expects to make it "almost a general-use system" after a small pilot program ends in September, Burrows said.

Mainframe, PC data access needs spawn tools activity

By Johanna Anshoro

With accessing legacy data on more information systems managers' minds, increasing numbers of vendors have started to target their tools for this arena. Two of the smaller and lesser known players are Cross Access Corp. and Carleton Corp.

Executives from both vendors claim their packages allow users to access both relational and nonrelational data. In that regard, both Cross Access in Oak Brook, Ill., and Carleton in Burlington, Mass., compete with Information Builders, Inc. and Micro DecisionWare, Inc., the market leaders in the data-access niche.

Carleton claims its software is geared for high-speed on-line applications, while Cross Access says its package is intended to take the development work out of data access as well as provide high performance.

Cross Access' tool, called CrossAccess, uses IBM's DB2 SQL as its data-access method. The difference between CrossAccess and other products, said President Ray Navarra, is that with the others, "once you get to the mainframe you have to write and test applications" to actually take the data and do anything useful with it.

How it works

In contrast, with CrossAccess the programmer has to enter a SQL "select" statement "and then we take over," Navarra said. CrossAccess handles the communications, optimization, data translation and other tasks associated with data access. There is one additional step for getting to nonrelational data: a database analyst has to map the nonrelational data to the relational world. CrossAccess provides a set of utilities to do that.

Navarra claimed his package has better performance than Information Builders' EDA/SQL, a claim backed up by a Gartner Group, Inc. bulletin that said CrossAccess will be "orders of magnitude faster in certain environments."

CrossAccess, announced in May 1992, had five users as of early May, with the number expected to double by the end of this month, Navarra said.

CrossAccess runs on Windows, IBM's MVS, Digital Equipment Corp.'s VMS, Microsoft Corp.'s Windows NT and different flavors of Unix including Sun Microsystems, Inc.'s SunOS. A server and a client portion are both required.

For its part, Carleton claims about 25 customers for its data-access tool, formerly called Data Engineer and now called Passport, in addition to the 100 or so users of Carleton's earlier product suite, a report writer for the audit community.

Data warehouses

Passport runs on IBM's mainframes and Application Systems/400s and on OS/2, DOS and Windows. Its target niche, said Carleton President Paul Flueckiger, is high-speed movement of legacy data into data warehouses. These are storehouses of information that typically reside on a Unix-based database management system or on some other host computer and are used for decision-support applications. In this the company competes with Information Builders, Micro DecisionWare and Prism Solutions.

But Carleton's difference, Flueckiger said, is that Passport can call up to 20 different databases or files with just one data definition. In September, Carleton will make generally available a graphical user interface component that will simplify the tool with menu options and screen prompts.

Faster tax returns offered

By Thomas Hoffman

As in most states, personal income tax returns for residents of New Mexico usually take from four to 10 weeks to process and return. Tax returns there and elsewhere are most often delayed by the paper-intensive, manual processes that state taxation agencies have historically used to sort through documents.

But thanks to an image processing system that the New Mexico Department of Taxation and Revenue is installing, residents from Tucuman, to Zuni next year should see their state tax returns in two to four weeks.

New Mexico recently plunked down \$1.5 million for an NCR Corp. document management system that it will use to process \$2.7 billion in tax and Motor Vehicle Division revenue each year.

The system, which includes three NCR 7780 image input processing transports, will be used to dispatch revenue generated by the state's 49 tax and fee programs.

New Mexico's Revenue Processing Division has been piloting an image-based application for personal income tax returns since April, according to Dick Minner, cabinet secretary at the Department of Taxation and Revenue.

Historically, it has takes the state about 10 weeks to complete tax returns for residents who file on April 15. But Minner said he believes the personal income tax

system, based on an application developed by Intehus, Inc. in Rockville, Md., will narrow that time. "If we can get the late returns out within a month, that would be adequate. We expect to get many of the early returns out within two weeks," Minner said.

In the past, the routing and sorting of tax returns was done by hand, which was time-consuming and error-prone.

But the client/server system, powered by an NCR 3445 server running Unix System V Release 4, will be designed to scan, index and route tax returns to the proper departments in seconds.

The system will be aided by an NCR intelligent character recognition module that was designed to capture the handwritten amount on tax returns, according to

Keo Thompson, a project manager at Intehus.

By automatically capturing handwritten amounts on tax returns, the state expects to minimize its data entry requirements, Minner said. In the past, the state relied on dozens of data entry clerks to input tax information into an IBM mainframe.

Minner said the state should be able to shave about 20 part-time data entry clerks from its payroll. That alone should result in \$200,000 to \$300,000 in annual savings.

Minner said the staff cuts are in line with the tax department's 10% annual turnover rate.



Dick Minner: We expect to get many of the early returns out within two weeks.



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Large Systems

Software application packages

Advanced Software Products Group, Inc. has announced Version 2.1 of Ecop-Logical, an executive planning tool.

According to the company, Ecop-Logical is a disaster recovery system designed to minimize downtime by monitoring backups and creating job control

language necessary to restore an environment when a problem affects a computer installation.

In a computerized format, Ecop-Logical's structured methodology automates information control, recovery and security. It resides in the user's environment but uses off-site storage.

The product runs on MVS/ESA, MVS/SR, MVS/XA and DOS/VSE.

Pricing for the product ranges from \$35,000 to \$65,000.

► Advanced Software Products

966 8th Ave. S.
Naples, Fla. 33940
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Eclipse Corp. has announced Form-Plus/400 forms software.

According to the company, Form-Plus/400 software allows users to create checks, labels and customized forms on the PC and then upload them to an IBM Application System/400.

On-screen icon selection for text, lines, circles, shades and more are included in the design process. The product merges complex graph forms and data from newly created files or preexisting files stored on the AS/400, the company said.

Prices range from \$4,000 to \$12,000.

► Eclipse Corp.

6824 Jimmy Carter Blvd.
Norcross, Ga. 30071
(404) 843-0815

Marcom Corp. has introduced Approval, an application that automates the flow of documents through an organization's approval routing system.

According to the company, the product is a work-flow management application that helps users move toward a "paperless" environment with an electronic system that provides more efficient and responsive management control of maintenance activities.

By pressing a single command key, users can produce request approval after developing a work request or requisition, and in one step can approve or reject multiple documents.

The product also has the ability to assign automatic approval for designated ongoing orders with predefined value limits, the company reported.

Prices range from \$15,000 to \$40,000.

► Marcom

86 Wells Ave.
Newton, Mass. 02150
(617) 955-0290

Generic Software, Inc. has announced Oakward, a word processing and office automation software package that runs on IBM's Application System/400.

The product comes equipped with an integrated spreadsheet, interfaces for directly accessing data files, a full-function text editor, a mailing list/customer base manager and a 750,000-word plus spelling dictionary.

Prices range from \$660 to \$4,995.

► Generic Software

895 Madison Ave.
Madison, Miss. 39110
(601) 853-1189

Database management

Sybase, Inc. has announced that SQR Workbench, the company's production report writing solution that is optimized for IBM's SQL databases, now supports two additional platforms. Data General Corp.'s Avilion D/GUX 5.4.2 and NCR Corp.'s 3000 Unix 5.4. According to the company, the product is an open reporting system that generates simple to complex reports in an assortment of formats from data housed in SQL databases.

Version 2.1 is bundled with a suite of analysis and debugging tools: Easy SQR, a menu-driven report prototyper; and SQR-Execute, a runtime program that permits users to execute SQR programs.

Prices range from \$1,850 to \$128,050, depending on CPU size and number of users.

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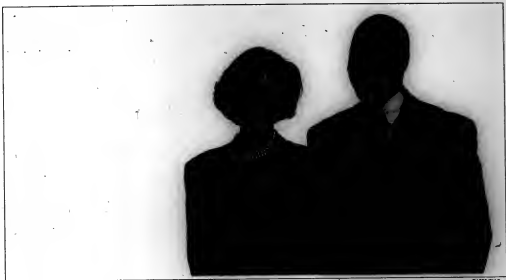
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Transaction processing

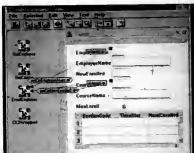
Digitalk adds CICS
integration to Parts

By Melinda-Carol Ballou

■ **Digitalk, Inc.** this week will ship **Parts CICS Wrapper for OS/2**, a component for Digitalk's **Parts Workbench** that will enable users to integrate CICS' on-line transaction processing capabilities with Parts applications.

Parts — **Parts Assembly and Reuse Tool Set** — is Digitalk's client/server tool set that provides rapid visual construction of applications from prefabricated software components. This allows users to assemble and reuse components from different technologies more easily, officials said.

For instance, in addition to supporting CICS, Digitalk said it will provide the ability to encapsulate Microsoft Corp.'s **Object Linking and Embedding (OLE)**, **Open Database Connectivity** and the **Object Management Group's Common Ob-**



The **Parts OS/2** component lets users connect CICS functions and data to applications on other systems

ject Request Broker Architecture (Corba) later this year. Components can be written in **Smalltalk/V**, **Cobol**, **C** or other languages.

The **Parts CICS Wrapper** lets users connect CICS legacy functions and data to visual applications. The wrapper manages data conversions between CICS and the **Parts Workbench** formats. Developers will also be able to call CICS **Cobol** subprograms on local or remote systems running under **OS/2**, **Windows**, **MVS** and **Unix**.

Users will be able to coordinate commit or rollback operations across several CICS parts within the same unit of work and use the multitasking support of CICS and **OS/2** to support parallel tasks. They will also be able to organize CICS transactions into individual parts, such as **NewOrder** part, **ChangeOrder** part and **PrintInvoice** part, to provide a logical view of transactions. Developers will be able to store the resulting CICS parts in a **Parts Catalog** for future use in building applications, officials said.

Developers will welcome the CICS support for **Parts**, said **Stuart Woodring**, analyst at **Forrester Research, Inc.**, a **Cambridge, Mass.**-based consulting firm. **Parts Wrappers** are not unique to Digitalk — such as **Corba** and **OLE** and communication protocols such as **IBM's Advanced Program-to-Program Communications** — will also facilitate development by shielding developers from dealing directly with the alphabet soup of emerging standards, he added.

The **Parts CICS Wrapper** is priced at \$2,995.

Free software cataloged

Firm compiles listing of 9,000 programs used by government

By Gary H. Anthes
Bellingham, Mass.

The good news is that **Uncle Sam** has a multimillion-dollar treasure chest of public domain software, much of it available free for the asking.

The bad news is that asking for it is not easy. Many of the programs are haphazardly archived and out-of-date, poorly published and difficult to obtain.

Bot Source Translation & Optimization (STO), based here, may have a solution — a catalog of 9,000 pieces of government software augmented by professional services to help users locate, obtain and sometimes re-engineer the code.

The catalog is built from STO's database of 15,000 programs written at the U.S. Departments of Energy and Defense, NASA, the Internal Revenue Service, other federal agencies and government contractors. The 600-page catalog is updated annually and is available on paper or PC disk for \$150.50.

The software spans 90 categories in mathematics, business, information processing and other disciplines. Sample catalog entries list programs dealing with Bayesian analysis, solar flares, environmental control, thermal regulation in the human body, manufacturing cost accounting, road design and those-

sands more topics. Programs typically are 100 to 500,000 lines of C, Fortran or Ada code.

Financial Analytical Strategic Trading, Inc., in **Belmont, Mass.**, investment advisors and fund managers, paid \$75 for government software for real-time analysis of financial data to support trading. **Duvid Treister**, vice president, said he found the software in the STO catalog, then had STO procure, install and help test it and train users.

Treister said the alternative would have been to develop the software from scratch at an estimated cost of \$15,000 to \$25,000. The software was well-documented and thoroughly debugged, he said. "It is sophisticated, and the graphics are quite good," he added.

STO will send free abstracts of software to catalog owners, said **Greg Aharonian**, company president. STO's charges for the source code typically range from "a few hundred to a few thousand dollars," depending on what STO has to pay the government, he said.

Although the government is im-

to create new software.

SoftCo, a spin-off of the **Joint Venture: Silicon Valley Software Working Group**, will begin a nationwide push to get software vendors to promote educational and legislative measures to protect software in the future, said **John Moran**, president of **SoftCo**.

That effort will include working with software vendors and information systems management to determine what skills employees must have and then helping educational organizations develop curricula around those skills.

Interested parties can contact the group at (408) 860-5254 or via **Compuserve** at 72165.3274.



proving with the **Defense Department**, the **Energy Department** and the **National Aeronautics and Space Administration** all having established software reuse centers. It is still not doing a good job of preserving and disseminating its investment — worth billions of dollars — in application code, **Aharonian** said. "There is little coordination across agencies. And you don't get any points for this stuff; there is no one whose career depends on it," he said.

Speaking from experience **MathSoft, Inc.**, a **Cambridge, Mass.**-based vendor of mathematical routines, said some of the software for its flag-ship product **Mathcad** was obtained from government laboratories with the help of STO. "The STO catalog is an incredible collection of stuff," said **Frank Purcell**, director of applications.

Purcell said the software was generally of good quality but had to be tested and significantly reworked to fit into the **Mathcad** user framework. He said some came with documentation and some did not, although often it was so intuitively commented it did not need additional documentation.

"Some large fraction of the programming time spent in industry is devoted to routines that have already been written," Purcell said. "STO potentially can save time in orders of magnitude over writing (an application) yourself."

Aharonian acknowledged that not all 9,000 programs in his catalog are in demand. "Some of it is very specialized," he said. "One program I have simulates village life in the Andes mountains."

Software group
unites on piracy

By Christopher Lindquist

Despite the stories of constant infighting and vicious competition in the software industry, there are core issues of enough importance — such as the battle against software piracy — to bring even the most distrustful parties together.

Now the **Santa Clara, Calif.-based Software Industry Coalition (SoftCo)** has appeared in hopes of protecting the software that exists today and the ability of developers

Softool ships link for mainframe/PC development

By Melinda-Carol Ballou

Softool Corp. is now shipping CCB/Bridge, a product that links software development on mainframes using the company's change and configuration management tools with development on PCs, company officials said.

For those developing and testing applications on PCs and then deploying them on the mainframe, CCB/Bridge can provide a connection, officials said.

CCB/Bridge acts as a communications link between CCB/Life Cycle Manager running on the mainframe and CCB/Manager running on the PC. CCB/Bridge enables users to synchronize local-area network and host activities, allowing developers to monitor changes occurring in both environments, officials said.

CCB/Bridge operates in a three-tiered environment using a communications link to make the host environment conceptually and operationally equivalent to link space, officials said.

CCB/Bridge is shipping now and is priced at \$12,000 per mainframe CPU.

Graphical user interfaces

On-line Help for GUI developers revised again

By Christopher Lindquist

What constitutes "good" vs. "bad" graphical user interface (GUI) design is often a crashout for developers, who have to try to tell how the file will come up but put the application in front of

users and hope for the best.

Corporate Computing in Sausalito, Calif., is trying to make the situation more scientific with the third revision of its GUI Guidelines, an On-line Help software that provides developers with rules and examples for good and bad GUIs. The

company also offers an "Effective GUI Design" course.

GUI Guidelines Version 3.0 costs between \$1,800 and \$18,900, depending on the number of users. The course is \$7,500 to \$12,000, depending on the number of attendees.

DON'T BE EXPENSIVE

Briefs

Progress, SCO unite

Progress Software Corp. in Bedford, Mass., and The Santa Cruz Operation in Santa Cruz, Calif., have signed a strategic partnership and cooperative support agreement under which the companies plan to optimize performance between Progress' Application Development Environment and the SCO Unix operating system. Under the support agreement, staff members from both firms will be trained to support the other company's products.

4GL for AXIP

Information Builders, Inc.'s fourth-generation language tool set Focus is now available on Digital Equipment Corp.'s OpenVMS-based Alpha AXP systems. Focus for OpenVMS is a fully compiled version of the complete Focus tool set and will support read/write access to DEC's Rdb and Rdb database management systems, according to New York-based Information Builders.

Meta tool kit for Solaris

Samadhi, Inc. in Menlo Park, Calif., recently released a Meta tool kit for the Sun Microsystems, Inc. Solaris 2.2 environment. The tool kit is for developers building applications for the common desktop environment.



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Application Development

Application development tools

Esnel Corp. has introduced ENFIN SQL Edition for AXI Motif, an object-oriented client/server application development tool for IBM's RISC System/6000.

According to the company, ENFIN for AXI is a Unix development environment that is based on the industry-standard

SmallTalk object-oriented programming language.

Client/server applications can be developed that use AXI's multitenant, multitasking environments. The product can also be seamlessly ported to OS/2 and Windows.

ENFIN for AXI is said to be the first client/server application development tool to adopt the Common Object Systems Environment, ENFIN Communicator and ENFIN Multimedia, two enhancements to

the ENFIN family, have also been introduced.

Prices range from \$1,995 to \$7,900.

► **Esnel**
26 Corporate Drive
Beverly Hills, Mass. 01803
(617) 821-5100

The Alps CASE Division has expanded its family of User Interface Management System (UMS) products that offer a multilanguage solution for developing

and maintaining the full life cycle of graphical user interface development.

Support for C, C++ and Ada languages is provided by the Teletec 2.7 multilanguage family of UMS products.

According to the company, enhancements for Teletec 2.7 include support for X.11RS and Motif 1.5.

Single-user license prices for Teletec/C++ 2.7 are \$7,300 and \$9,500 for Teletec/Ada 2.7.

► **Alps CASE Division**
6660 Cornerstone Court West
San Diego, Calif. 92121
(619) 457-2700

Computer-aided software engineering

CGI Systems, Inc. has announced a new Lateral Engineering service for LINC applications.

According to the company, Lateral Engineering is a technique for converting fourth-generation language applications to CGI's Pictbase, enabling them to run in any of 53 operating environments, including those from Digital Equipment Corp., Hewlett-Packard Co., Novell, Inc. and IBM as well as Unix. The service employs a compiler that CGI designed to convert existing applications automatically to the company's repository-based Pictbase environment.

Prices range from \$50,000 to \$250,000.

► **CGI Systems**
1 Blue Hill Plaza
Pearl River, N.Y. 10665
(914) 725-5030

Languages

Liant Software Corp. has introduced RM/Companion 2.0, a report writer for the company's RM/Cobol environment.

A new what-you-see-is-what-you-get editor is provided that speeds and simplifies ad hoc reporting without custom programming.

An improved user interface and a direct interface to Liant's business graphing and charting software for RM/Cobol users has been included.

The product runs on every platform supported by RM/Cobol: DOS, OS/2 and a variety of Unix systems. RM/Companion 2.0 prices begin at \$700.

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TOCK

GLOBAL SOFTWARE? WHERE?

When does it make sense to share software with offshore units? Pepsico, Esprit, Corning and other experienced hands tell what works — and what doesn't.

P

By Johanna Ambrosio

ete Bates, vice president of systems at clothing manufacturer Esprit de Corp. in San Francisco, found out the hard way that sharing software on a global basis does not always work according to plan.

About a year ago, Esprit's U.S. subsidiary adopted a production management system developed at the company's Far East affiliate. The software tracks where an item is manufactured, sewn, pressed and so on. But

the software was only a "moderate" success here, Bates says, because "the ways of doing business are quite different in the two hemispheres."

Bates' company ran into a wall shared by virtually all major corporations that do business overseas: Despite good intentions and the business benefits, sharing software does not always work because of differences in how people work around the world.

Although many companies are going global and information systems groups are under increasing pressure to maximize tech-

nology investments, seasoned IS hands say not all software can or should be common everywhere.

In the Far East, for example, it is standard for the shop sewing the garment to handle the other steps of finishing and washing. In the U.S., however, convention dictates that the individual steps be contracted out to different parties.

The end result, Bates says, was that "the system that Hong Kong put together did not have the features for us to manage effectively the transition from factory to factory."



Pepsico's Alan Deuring: "When someone who can speak only Polish calls up a vendor's support line in the states, it can get very interesting."

Consequently, Egri's U.S. group is converting to another package.

Deciding on the basic infrastructure of what will be shared is just the beginning, according to IS executives and consultants. The biggest management hurdle by far involves cultural issues, convincing overseas management that the systems people at headquarters are there to help and involving the overseas managers in the whole process.

Other "gotchas" include the following:

- Arranging for service and support in remote locations.
- Making sure the package as well as the documentation support all the major national languages.
- Dealing with import restrictions and other legalities in foreign countries.
- "Tracking vendors" different prices and business requirements worldwide.

With all these different balls in the air, managing global software is akin to "playing a chess tournament at 15 different tables while spinning plates," says one former chief information officer who attempted it, with mixed success.

Managing chaos

The most critical factor—that which can make or break a global software situation—is getting buy-in from the managers overseas. This requires the tact of a diplomat and the selling skills of a superstar salesperson, as well as an honest attempt to include the foreign managers in as many steps of the process as possible.

Otherwise, managers will never truly implement the software the way it was intended and will likely erect all kinds of barriers to prevent the project from being done.

Experts say it's also helpful to remember two prime rules that apply to many IS endeavors. Rule No. 1: It al-

ways takes longer than you think, so patience is definitely a virtue. Rule No. 2: See rule No. 1.

Not even megacompanies with many subsidiaries and expertise in overseas dealings are immune to pitfalls. Nearly everyone has problems, as did a huge energy concern that recently tried to introduce into two Canadian groups software that had been running in certain U.S. operations.

Complicating matters was the fact that the two Canadian facilities had at one point been competitors, so acquisition had forced them to rethink their information technology infrastructure.

"So we go into the Canadian guys and ask them what they think about using X or Y," the clearly exasperated CIO says. "And once one found out that the other was going to use it too, well then he didn't want it."

What was originally scheduled to take three or four months wound up requiring the better part of a year, the CIO says. "We resolved it by basically working with them, building them up so they could get to a point where they could share things."

While that may be an extreme example, CIOs say it is common for people in far-flung operations to partially mistrust the IS group that is sent by headquarters to "help." One counter tactic: Get overseas management involved as early as possible and position the new system as something that will help everyone meet the company's goals.

That philosophy worked well at Corning Glass Works' Japanese operation. Corning does not have a mandate to standardize on software worldwide but will share "where it makes sense," says Harvey Shrednick, senior vice president of information services at the Corning, N.Y., headquarters.

In this instance, Corning developed

THE PROBLEM

Managing global software, one former CIO says, is like "playing a chess tournament at 15 different tables while spinning plates."

It's a big world after all

GOTCHAS

- Service and support difficult to arrange in remote locations.
- Software and documentation might not support foreign languages required.
- Hesitant with import and other tariff laws.
- Vendor prices and global policies may differ widely.

WHAT TO DO

- Make sure you get buy-in from local managers overseas. Nothing can make or break a project faster.
- Allow twice as much time for setting up global software distribution.
- Make sure applications chosen are really suited for global distribution. It makes sense, for example, to transplant financial systems.
- Make sure you get reference accounts. Ask for a detailed list of the vendor's overseas support facilities. Look for "third-to-last" support.
- Decide who's best to do the implementation: a U.S.-based team? Local? Consultants?

a plant floor reporting system used domestically. The Japanese group needed the same basic functions, customized to their requirements.

"It probably would have been a lot easier to pull something from domestic and say, 'Use it,' but the involvement of the Japanese IS people in the process probably did more to gain acceptance of the system than any other factor," Shrednick says. In the end, "they felt it was their system, not the U.S.," even though there was a U.S. guy over there facilitating things.

The IS facilitator went to Japan three times during a six-month period, working with the Japanese to help transfer knowledge about the system and what they needed to change—for

example, a hot key to switch between English and Kanji characters.

How much to standardize?

Some applications are local in nature, so it doesn't make sense to need them throughout a corporation. Others are appropriate to share throughout a business division or in a specific region—North America, for example. Only a very few applications can truly be standardized for use virtually anywhere.

Sid Diamond, former CIO at Black & Decker Corp. and now an independent consultant in Stevenson, Md., figures that only between 5% and 15% of a company's applications are truly "Global software," page 78

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Global software?

CONTINUED FROM PAGE 75

global in nature. These include functions such as financial reporting and electronic mail, he says.

"You must be careful in what you designate as a common system. It must be companywide in terms of business functions, and there must be an overwhelming business case for doing so," Diamond says. "And even then you have to provide some room for local flexibility." For example, a common order-processing system must allow for local differences in billing conventions.

Financial-reporting systems are good candidates for standardization. They enable multinational firms to make sense of the numbers coming in from all over the globe. But even here, local differences in monetary units and reporting practices must be accommodated.

Another good business case can be made for operations that run virtually the same around the globe — PepsiCo, Inc.'s Pizza Hut chain, for example. "The Pizza Hut business from country to country is not that different," says Alan Deering, vice president of management information services at PepsiCo in Purchase,

N.Y. "There's a rather significant cost advantage to using software that is already developed rather than developing it again and again." He says this creates consistency and speeds up implementation of systems that are already proved and bug-free.

But even here, the software is "not a mirror image" from country to country. Deering says. "You're implementing about 80% the same; then there are differences in language and tax code." Most IS shops that have rolled out software among different locales estimate that between 80% and 90% of a given system is truly the same, with regional variations accounting for the rest.

Service in Bora Bora

IS managers looking for a real kick can try installing a PC local-area network in some remote region of a foreign country. When the LAN goes down, or if there are any other problems or questions, who handles them? Someone in the U.S. headquarters group, an IS staffer in a more local place, a vendor in the U.S. or a vendor representative overseas?

As Deering put it: "When someone who can speak only Polish calls up a vendor's support line here in the states, it can get very interesting." As such, global software implementation can lead an en-

tirely new meaning to the concept of "help desk." Support and service issues must be thought through at the beginning of the process — whether the service will handle it on its own or if there is an outside vendor to provide the service.

Roger Pierce, manager of international accounting at Russell Reynolds Associates, Inc., an executive search firm in New York, has a war story of his own. Russell Reynolds has offices in 12 foreign locations. It implemented an accounting package in four of those offices from a Big Six accounting firm that Pierce declined to name.

We thought they would be big enough to support the product, and we bought their story that the support would come through their international network of tax, audit and consulting locations," Pierce says. "But it turned out that the product just wasn't big enough revenue producer for them to manage on a worldwide basis." The vendor's European offices "just weren't interested" in supporting the product, and the Far East affiliates "just didn't know enough," he explains.

Russell Reynolds has since installed an accounting package from another vendor. But the first time through was definitely a "learning experience."

Pierce says, and this time "we really did our homework and talked to references instead of taking it at face value."

Sound advice

When looking at global support and service, keep in mind the following tips:

- As you would with any other software product, talk to actual customers about their experiences.
- Ask for a list of the vendor's overseas support facilities. Find out which ones are bona fide employees and what their skill levels are, which ones may be graduate representatives working on behalf of a larger number of suppliers.

- Lori Pena, a principal at Pena & Bates, a software licensing consultancy in San Jose, Calif., suggests paying particular attention to "local-to-local" support. This means users in Australia, for example, get supported by whatever vendor location is closest, preferably in the same country but maybe in Hong Kong instead of being supported by the Boston office.

Whatever happens, it may be worthwhile to consider some advice from Robert Rubin, vice president of information services at ERI Atchabah North America, Inc. in Philadelphia. "It's simply a matter of style. Different cultures may solve the problems very differently, but businesspeople have very common objectives." ■

Intelligence

Files

Rule of seven

A review of discussions at past American Management Association, Inc. meetings suggests that it takes about seven years for an idea to work its way into the mainstream of corporate America.

For example, seven years ago, talk about "quality management" was confined to the executive suite and focused on product improvements, whereas today it is considered a business necessity across the board. Likewise, seven years ago, just-in-time concepts were confined to manufacturing. Today, the concept includes all parts of the organization — even just-in-time personnel policies.

Seven years ago, the information systems function was more interested in computer functionality than in business alignment. Today, customer service is on every IS manager's lips.

Source: *Management Review*, magazine, July 1993, (121) 343-345.

How CIOs do it

At a time when chief information officers must juggle a variety of problems simultaneously, researchers are trying to figure out how CIOs get the information they need to make decisions. After carefully tracking the activities of three CIOs dealing with 17 different decisions, researchers came to two conclusions.

When it comes to the "selection" stage of a decision, such as selecting a vendor, CIOs turn to external sources of information. They may seek out reports of other companies making the same choice, for

example, in order to legitimize their decision.

Otherwise, they usually consult internal sources of information, especially when time is limited, but they do not use their own computer systems for decision support. All three CIOs had executive information systems, but the CIOs did not personally use them.

Source: *Communications* by Jack Jones at Texas Christian University, (81) 507-753; Carol Saunders at Florida Atlantic University, (607) 357-2813; and Raymond G. McLeod at Texas A&M University, (409) 845-3139.

Half and half

A recent IBM survey of 400 executives found that half of them plan to deploy an imaging system and then undertake re-engineering of work processes. The other half plans to take the opposite approach: first arrive at the same destination; they will re-engineer work processes and then use imaging technology to manage the work flow.

Source: *IBM Executive David Littlefield* quoted in "The Desktop Workflow Report," June 1993, (607) 262-1531.

Ergo-helper

The Center for Office Technology has published a set of guidelines for establishing a comprehensive program to improve employee comfort, morale and productivity in the use of YDTs. It was designed to help employees cope with the growing problem of cumulative trauma disorders related to computer work.

The program covers five essential areas: management commitment and employee involvement; workplace analysis; intervention; ergonomic medical management; and training and education. The guidelines are available for \$10.

Source: Center for Office Technology, Roslyn, Va. (703) 276-1024.

Calendar

AUG. 15-AUG. 21

Share Summer '93 Meeting, Washington, D.C., Aug. 15-20 — Contact: Share leaders/quartets, CME Corp., Ill. (312) 644-6109.

Client/Server '93 East, Washington, D.C., Aug. 17-20 — Contact: CMP Conference & Exhibit Group, Manhattan, N.Y. (212) 542-5717.

International Networking Conference '93, San Francisco, Aug. 19-23 — Contact: Universities Space Research Association, Mountain View, Calif. (415) 350-6317.

AUG. 22-AUG. 28

Interop '93, San Francisco, Aug. 29-27 — Contact: Interop Co., Mountain View, Calif. (415) 941-3359.

AUG. 29-SEPT. 4

Fed Micro '93 CD-ROM and Multimedia Conference and Exposition, Washington, D.C., Aug. 29-Sept. 2 — Contact: TSI Laserback, National Trade Productions, Inc., Alexandria, Va. (703) 690-4200.

Structured Development Forum, Philadelphia, Aug. 31-Sept. 1 — Contact: Explori Systems Consulting, Inc., West Chester, Pa. (215) 626-8280.

SEPT. 5-SEPT. 11

Composage '93, Las Vegas, Sept. 9-11 — Contact: UNSC Investment Group, Newark, Calif. (510) 657-5415.

SEPT. 12-SEPT. 18

Expo '93 East, Atlantic City, Sept. 14-15 — Contact: C&E Corp., Inc., Uxbridge, Pa. (215) 458-6415.

Engineering Document Management Systems, Anaheim, Calif., Sept. 14-16 — Contact: The Kallhoff Group, Cincinnati, Ohio (513) 871-6898.

SEPT. 19-SEPT. 25

Mobile Expo, San Jose, Calif., Sept. 21-23 — Contact: Digital Consulting Inc., Andover Mass. (419) 470-2680.

Info Expo '93, New York, Sept. 21-23 — Contact: National Biennial Exposition, Inc., Fort Lee, N.J. (201) 546-1400.

SEPT. 26-OCT. 2

IS as a Service Organization, Columbus, Ohio, Sept. 27-29 — Contact: Gablett & Associates, Bedford, N.H. (603) 625-7773.

OCT. 3-OCT. 9

The Ninth International Congress on Advances in Nonlinear Printing Technology/Japan, Harrogate, Yorkshire, Japan, Oct. 4-8 — Contact: The Society for Imaging Science and Technology, Springfield, Ill. (202) 645-4000.

OCT. 10-OCT. 16

Design/West, Anaheim, Calif., Oct. 10-12 — Contact: Karl Seidel, Reed Exhibitions Company, Stamford, Conn. (203) 364-0000.

THE content challenge

Whether you
download data from
an on-line newspaper
or capture selected
in-house information
for desktop publish-
ing, you are using
content — key busi-
ness information
embodied in software.

The edge will go to
those companies that
can manipulate and
use content wisely.

**By Esther
Dyson,**

PRESIDENT,
EDVENTURE HOLDINGS, INC.,
NEW YORK

Mention content to com-
puter people and they
think of multimedia,
video-based electronic
mail, virtual reality and
other flashy offerings.
Ask about usefulness and they'll
admit that content will all happen
in entertainment, advertising and,
perhaps, training first.

However, there is more to "con-
tent" than that. It lies in what I call
"business content" — not jazzy
multimedia that performs great
demonstrations but useful busi-
ness information embodied in soft-
ware that performs actual work.

Although content doesn't have
to be electronic, the focus here is
on electronic content and how it
can be brought alive.

Dead texts, unparseable images,
monolithic stretches of video can
be delivered electronically, but
they might as well be delivered on
paper, records (remember
those?), film or tape.

The challenge — or opportunity
— is to transform them into live in-
formation that can be manipulated
and enhanced electronically.

That's not to say all content has
existed before. Fresh electronic
content, created for its electronic
form, is especially exciting.

The value of electronic content
lies in its manipulability: either to
make it more intelligible or acces-
sible to humans or to make it inter-
act with other applications and
tools. Ideally, humans can query
content (for example, in an on-line
newspaper or classified listing) by
key words or values in fields such
as date, topic, author, skills in a re-
sume or name of an applicant.
They can also browse through
some automatically arranged
schema, specify criteria for dis-
play and highlight information of
particular interest.

But the information
can also be reused
and recombined as
well as transmitted,
searched and dis-
played (see page 80
for "Content in ac-
tion"). It can be de-
fined and manipulated
before being fed into an
application such as a let-
ter generator or selective
publishing tool, or it can gen-
erate parameters that control
execution of an application.

Thus, the more interesting con-
tent is executable and active — in-
formation to drive tools or to be re-
fined or manipulated by tools.
Expert systems typically provide
advice; software content tools ex-
ecute the advice. Call them "clerk
systems" that do dull but useful
tasks.

For example, you can almost
automatically design a deck, plan
a schedule that fits both Juan's
and Alice's constraints, organize a
conference or an office move or
send the right letters to the right
people.

The goal is a combination: user
input and generic rules or formu-
las and suggested values for, say,
building a deck or calculating a
year-end bonus.

In a world of commodity soft-



ware tools and platforms, content
software is the next frontier of
unique value and usefulness. Just
as PCs brought tools to the com-
mon person, so does the embodi-
ment in software of content
(knowledge and procedures) bring
a sort of wisdom — or at least pro-
cedural expertise and consistency
— within reach of the depart-
ments, branch offices, smaller
firms and individuals who couldn't
develop it themselves.

The discussion about content is
just beginning. On the next page,
key players in the market tackle is-
sues such as development, hot
technologies and content-rich ap-
plications.

The information is from talks at
the 1993 PC Forum conference
sponsored by EDventure Hold-
ings, Inc.

CONTENT POVERTY

Today's electronic offerings are content-poor. It's not
that content isn't there; it's that nobody's successfully
brought it into a product. Electronic encyclopedias are
based on those you need to be able to buy at Safeway.
They're not the Encyclopedia Britannica. Until content is
more complete, such efforts won't be successful. 77

MICHAEL W. DOBSON, VICE PRESIDENT,
INDUSTRY AFFAIRS, AND CHIEF CARTOGRAPHER
RAND McNALLY & CO., SKOKIE, ILL.

THE content challenge

content in action

connects between retailer trading services.

company Quick Response Services, Inc., Richmond, Calif. connects retail facilities trading partnerships between re-

tailers and their vendors. Using universal product codes, electronic data interchange and a retail version of just-in-time manufacturing (called Quick Response), the system lets retailers and vendors set up a connection to exchange a self-populating database.

CONTENT SERVICE: MacNet. connects MacNetNet, Inc., San Francisco.

MacNetNet. MacNetNet puts buyer preference information into a database, which it then uses to cross-reference people on a network and provide artist recommendations. When users sign up (for a flat fee of a few dollars a month

for unlimited use), they submit a list of favorite artists. MacNetNet matches profiles to new artists and sends and lets users preview 30-second cuts.

Users can get detailed information (credits, recent Billboard chart position) about a recording. They can also find out about concerts in their area, look at the artist's touring schedule, pick out a seat and order a ticket.

CONTENT SERVICE: Conquest connects Trilogy Development Group, Austin, Texas.

Conquest's Conquest is an online order processing configuration quoting system for computer vendors.

Salesmen can find out if certain system configurations work together and get a price quote. They can also order. Plans are in the works to expand the service to noncomputer vendor customers. The system is testing a system that will configure the Top 5 PC vendors in a multi-vendor network configuration, generate the prices and respond to requests such as "Give me the cheapest system" and "Give me the one with the longest warranty."

How do you build content-rich applications?

44 "Properly done, the information technology people write the model, and the business people say, 'Yes, that reflects our business; that's what we want to do.' If you change the model, you change the applications. The model becomes a common way to communicate. This minimizes the amount of ad hoc code written and results in higher productivity.

There's no longer the notion of one monolithic application — say, the customer's sales order system. Instead, many individual applications must be able to exploit different devices [and] not be dependent on any platform. They have to be portable.

Even if your organization decides to standardize on a particular device, your customers will not. The software will always have to support diversity.

One key to applications this diverse is something we might call safety or quality assurance. To achieve this, the business content — the business rules — have to be built into the applications and the servers. They have to be dynamic: Change the policy, and the system immediately reflects that.

Object orientation is not the solution to all of these problems; it's just one aspect. In its pure form, object orientation says there's only one error message: "I don't understand." 77

ROBERT EPSTEIN, FOUNDER AND EXECUTIVE VICE PRESIDENT, SYBASE, INC., EMERYVILLE, CALIF.

44 [Taligent] works on a concept of frameworks, which is the content piece. We put together classes of objects that focus on a reusable design to solve a problem. Think of a networking framework that allows you to generically support networking but then add your individual support for TCP/IP, AppleTalk, Ethernet and so forth. The applications immediately are aware of the application support implied in your network support.

That idea also carries down into the systems level. People use this notion in tools, interface work and database access. Frameworks enable you to work on that little piece of code. The object structure enables us to put in all these functions. In the end, you have a system that has objects at its heart, but the frameworks make it powerful. The content becomes the frameworks.

All this is not just theory; some of these systems are up and running, although they're not the robust ones you'd ship into the marketplace.

One of them is a Macintosh-class application, written in several thousand lines of code and in months, rather than the hundreds of thousands of lines of code written over years. We added features to it in 100 or 200 lines of code in a couple of days, rather than thousands of lines of code in months. 77

JOE GUGLIEMINI, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, TALIGENT, INC., CUPERTINO, CALIF.



What will make content viable?

44 A type of computing is emerging that will become mainstream between now and the end of the decade. We refer to this as electronic computing. Elective users don't have to use computers; they have to be seduced into using them.

Where will the users come from? Customers and prospects. You'll deal with hundreds of thousands of users.

Imagine building a computer system with 100,000 users, only a few hundred of whom are your employees. How do you build that system so that everything is protected and everyone gets consistent access? Applications will have to look like your business. By looking at the screen, somebody will recognize what your business is and the products and services you offer.

What's the market getting interested? Business content is hope-

lessly buried inside code.

Three major changes must occur in order to make content viable and to focus computer systems externally.

The first change is to create applications with viable content; the

second, applications that can travel safely; the third, applications that encourage elective users.

The notions of viable content and elective-use applications blur the distinction of where the company ends and the customer be-

gins. The fundamental difference among businesses is not the technology but their business models. In the computing environment today, the business model is completely divorced from the computer model. 77

ROBERT EPSTEIN, FOUNDER AND EXECUTIVE VICE PRESIDENT, SYBASE, INC., EMERYVILLE, CALIF.

random thoughts ON content

MODELING THE FUTURE

44 The increase of user content and decrease of model content is the trend in computer simulations, which will become a more effective tool for learning and communication.

About a year ago, we started a business simulations division. Our first contract was with Chevron, simulating its refinery. We're

working on projects with PG&E, California's power utility, to simulate the power grid. Those simula-

tions are becoming tools for education. 77

WILLIAM WRIGHT, DESIGNER, MAXIS, ORLANDO, FLA.

BYE-BYE COMPUTING

44 The notion of computing as a distinct independent pursuit seems to me to be doomed to exactly the same fate as that of servicing. Today, we think of computing as something that stands alone. But it is getting very clear that computing will disappear into the things for which we use it. 77

DAVID LIDOLE, PRESIDENT, INTERVAL RESEARCH CORP., PALO ALTO, CALIF.



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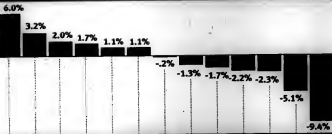
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Marketplace

Big (system) savings

By Stephanie Wilkinsop



A) KNOWING WHEN TO add capacity to a mainframe is a no-brainer; when use thresholds reach 70% to 80%, it's time to think of supplementing your large systems. But the days of simple one-on-one shopping are over.

Changes in the way large systems vendors are doing business have created more options for data center managers looking for deals. When contemplating changes for your system — adding to it, trading up or down or rightsizing — there are a number of options to choose from and resources to use.

Trade-ups

On some trade-ups, prices may be more flexible than ever before. In February, for instance, IBM announced it would no longer distribute list prices on large air- and water-cooled mainframes. Customers can now negotiate with IBM on prices "based on the amount of business they do with IBM," says Glenn Brogan, a spokesman for the Mainframe Marketing Group in New York. That could be good news for those in the market for new large systems, says Mike Heylin, an industry analyst at Creative Strategies Research International, Inc. "If you can deal, you can deal down."

Short-term lease

The rising popularity of distributed systems combined with growth in the power

and capacity of smaller systems has made short-term leasing of mainframes more attractive.

For instance, when Cleveland-based Agency Rent-A-Car decided three years ago to move its database from a Wang Laboratories, Inc. VS 10000 to a network of distributed PCs connected to a Digital

Swap shops

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Equipment Corp. VAX server, they purchased the mainframe outright. They hoped the machine would have enough capacity to be cost-effective during the transition. But with the project approximately 70% complete, the company needs to supplement the VAX with several smaller platform database servers.

"These days, price/performance ratios are changing so dramatically that we could replace that \$1 million machine with high-powered workstations with similar capacity for a fifth of the price," says John Scallan, director of MIS at Agency.

"If you make commitments on shorter terms, you won't buy excess capacity," he says. Scallan's advice: Don't commit

dollars today for computing power you won't need for two or three years.

Mainframe economics

Learn to calculate the "useful life" vs. the "economic life" of your mainframe. Many companies that have shifted their critical applications to other hardware still hang on to their old mainframe for less critical applications. According to Susan Middleton, senior analyst at International Data Corp. in Framingham, Mass., this makes sense—to a point.

"It is similar to the situation with PCs: You give the technical engineers the most advanced machines, but for data entry people, an old 286 [PC] will be fine," she says. Older mainframes still have a place in the data center but when maintenance costs become a burden, it's time to get rid of them. Middleton says.

On-line forums

Bulletin boards and user groups provide a forum for buying and selling used equipment. User groups, such as Digital Equipment Computer Users Society (DECUS) and GuideShare for IBM customers, also provide a network of potential buyers for hardware you are looking to sell.

"I always check the 'Swap Shop' on the DECUS bulletin board when I'm looking for equipment," says Ralph Mercorella, deputy director of operations at the Department of General Services, Office of

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Fleet Administration for the city of New York. "I have seen people offering such things as a DEC 6310 for 60% to 70% cheaper than you could get it elsewhere."

Benchmarking

Some consulting companies can show you how efficiently and economically mainframe equipment is being used. "We closely match our statistics so that clients are only compared to their peers — similar-size companies or companies in the same line of business," says Gilbert Moti, vice president of data center operations at Real Decisions Corp. in Darien, Conn.

Wilkinson is a free-lance writer in Charlottesville, Va.

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Laurel Hill Software Inc. (800) 554-3678
Metech Corporation: Nationwide
UNIX, DB2/AS, QJ03 (412) 373-6400
PowerGen (PowerBuilder Specialists)
Tampa, FL (813) 281-2990
FL Source, Inc.
FL Lauderdale, FL (305) 493-6801

CUSTOMER SERVICE
The Help Desk, Inc.
Phoenix, AZ (602) 460-1925
PowerGen (PowerBuilder based application)
Tampa, FL (813) 281-2990
SPECTRUM ASSOCIATES
Watson, MA (617) 852-0032

DATA CONVERSION
Data Conversion, Inc.
Madison, NJ (610) 525-0640
DATA CTR DESIGN/MGMT
21st Century Innovations, Inc.
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Advanced Data Management (800) 855-4377
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INTERBASE/PARADOX Consulting
Avon Solutions, Inc. (308) 520-1711
Business Application Developers, Inc.
Anchorage, AK (907) 562-5646
Computive Associates
River Edge, NJ (800) 847-6863
On-Line Systems Group
St. Louis, MO (800) 322-5365

DISASTER RECOVERY
Computer Security Consultants, Inc.
Ridgewood, CT (800) 925-2724
Advanced Information Management (703) 643-1032
Woodings, VA FAX (703) 643-2722
Raymond Professional Management, Inc.
Roswell, GA (404) 587-4090
Recovery Management, Inc.
REAST-BIS Software (800) 956-8888
Resound Systems
LORPIS Software (800) 834-3516

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MS Training Institute (508) 875-7999
Farmington, MA (508) 875-1153
National Education Training Group, Inc.
Naperville, IL (708) 360-3000
Oxyd Oriented Preparation Services, Inc.
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ELECTRONIC DATA INTERCHANGE
EDS Associates, Inc.
Burlington, MA (800) 834-8354
EDI Able, Inc.
Melrose, PA (215) 959-0813
Integrated Software Specialists
Schramburg, IL (708) 240-5070

ENTERPRISE RESOURCE PLNG
FOURTH-SHIFT CORPORATION (412)
Minneapolis, MN (800) 433-2467

EXECUTIVE INFORMATION SYSTEMS
XENOS Corporation
Dallas, TX (214) 869-9650

EXPERT SYSTEMS
FOUNDATION TECHNOLOGIES, Inc.
Boston, MA (617) 720-2760
OXO Corporation
Annapolis, MD (410) 224-3314

FOCUS
FOCAL SYSTEMS, Inc.: Focus Consulting
Seattle, WA (206) 782-4467

GOVT/MUNICIPALITIES
Arthur Ellington & Co.
Arlington Heights, IL (708) 506-0555
DC, Inc.
Chicago, IL (312) 464-1020

GROUP WARE E-MAIL
ACR Inc. (Lotus Notes VAR)
New York, NY (212) 629-3370

GUI FRONT ENDS
WATERFIELD PowerBuilder Sales & Consulting
Lexington, MA (617) 852-6400

HEALTH CARE
Systems Resources Corp.
Burlington, MA (617) 270-9226

HELP DESK
The Help Desk, Inc.
Phoenix, AZ (602) 460-1925
PowerGen (PowerBuilder based application)
Tampa, FL (813) 281-2990

HUMAN RESOURCE SOFTWARE
SPECTRUM Human Resource Systems Corporation
Denver, CO (800) 334-5660

HUMAN RESOURCE SYSTEMS
POLAN Personnel, Benefit, and HR Systems
St. Louis, MO (800) 327-2729

INFO DELIVERY SOFTWARE/SVCS
GenTrac, Inc.
Dallas, TX (214) 691-0300

INSURANCE
Programming Resources Company
Hartford, CT (203) 726-1426

IMAGING
Avon Engineering, Inc.
Boston, MA (617) 247-7665
Gymnasium Information
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ISO 9000 Doc. Mgmt. Systems
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SPECTRUM ASSOCIATES
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Introp Software, Inc.
Burlington, MA (617) 273-2520

ManTrak - Management Tracking System
Open Systems Holdings Corp. (800) 326-2276
PowerGen (PowerBuilder/Systems application)
Tampa, FL (813) 281-2990

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A National Computer Security Association
Carle, PA (717) 258-1816
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Data Conversion, Inc. (610) 525-0640
Metech Corporation: Nationwide
PowerBuilder, C++, Visual Basic (412) 373-6400

PAYROLL SYSTEMS
SPECTRUM Human Resource Systems Corporation
Denver, CO (800) 334-5660
POLAN Payroll, HR, and Tax Systems
St. Louis, MO (800) 327-2729

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Productivity Management Group, Inc.
East Amherst, NY (716) 659-7724

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Spectrum Software, Inc.
Emmett, NY (914) 592-0200

RIGHTSIZING
UNIK, C++, DOS, WINDOWS, PRO-IV
Avon Solutions, Inc. (308) 520-1711

SALES FORCE AUTOMATION
Gateway Systems Corporation
East Lansing, MI (800) 333-9096

SECURITY
National Computer Security Association
Carle, PA (717) 258-1816
Phase 2 Consulting, Inc.
Columbus, IL (615) 333-4536
RSH Consulting, Inc.
Newtown, MA (617) 969-9050
System 613, Inc.
St. Louis, MO (914) 425-7758

SOFTWARE FOR SCHOOLS
Massachusetts Computer Systems, Inc.
Methuen, VT (603) 541-3028

SPEECH INTEGRATION
Zellick, Inc.
St. Louis, MO (314) 359-9607

STORAGE MGMT SOFTWARE SVCS
Acrop
Riverside, CA (909) 658-7012

WHOLESALE DISTRIBUTION
Arthur Ellington & Co.
Arlington Heights, IL (708) 506-0555
ACI - Chris Software Advantage
Open Systems Holdings Corp. (800) 326-2276

Friday Stock Ticker

Gainers

Losers

Percent

Company	Price	%
Pharmacia Corporation	46.9	+3.4
Colson Corp.	24.1	+3.2
Intertec	24.9	+3.1
Tricom Corp.	24.9	+3.1
Electronic Data Systems	23.7	+3.0
Quest Diagnostics Inc.	19.4	+2.9
US West Inc.	18.3	+2.8
Amgen Corp.	14.8	+2.7

Dollar

Company	Price	%
Pharmacia Corporation	46.9	+3.4
Colson Corp.	24.1	+3.2
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Earnings reports move stocks

High-tech stocks rode up down last week in the wake of quarterly financial announcements. While many firms had good news to report, several companies found investors hard to please.

Chip maker Cirrus Logic, Inc.'s (CRUS) quarterly sales were down sequentially but up 47% year-over-year. The firm's profit of \$5.8 million reflected a \$10 million inventory write-down charge but an offsetting \$10.1 million in net income credits. Cirrus Logic shares held up 11 points on Monday and 51 points the next day.

Centigram Communications Corp. (CCGM) stock responded to record financial results. Centigram shares jumped 21 points to bid a new 52-week high Monday after the company posted sales up 32% and profits up 50% from the year-ago quarter.

Big-system software provider 4th Dimension Software Ltd. (4DSD) found Wall Street less responsive. The company racked up record revenue and a 67% increase in quarterly income, but 4th Dimension's shares moved up only half a point on Tuesday after the announcement.

VMark Software, Inc. (VMSK), an applications development tool vendor, saw revenue increase 63% for the quarter and operating profit grow by 64%, but VMark issues reacted Tuesday with a 110-point slide. — Derek Slater



Several issues posted gains on Thursday, May 24, and additional trading offers. Computerized 87th issue also published weekly, except on August and a single publication for the week of September 10. The week of September 10, 1991, is the last week of the year. The week of September 10, 1991, is the last week of the year. The week of September 10, 1991, is the last week of the year.

52-Week Range

Company	Price	%
Pharmacia Corporation	46.9	+3.4
Colson Corp.	24.1	+3.2
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INDUSTRY PULSE: Wireless technology

Many network users remain skeptical about wireless technology for good reasons — high product costs, slow network speeds, lack of standards and the investment in their current system. All of these have kept wireless technology in a small niche market.

TOTAL U.S. WIRELESS REVENUE
(IN MILLIONS)

1989	\$1.2
1990	\$3.6
1991	\$24.8
1992	\$96.6
1993*	\$456.9
1994*	\$961.8
1995*	\$1,568

LAWRENCE J. HARRIS

■ The Federal Communications Commission has reserved 3 MHz of spectrum in the 900-MHz band for wireless personal communications systems (PCS, July 3).

■ Because of an existing law, the privacy of wireless data communications does not get much legal protection. The Electronic Communications Privacy Act of 1986 failed to anticipate the advent of radio-based communications services and does not cover them (ENR, June 17, 1992).

TECHNOLOGIES
(PERCENT OF U.S. REVENUE)

	LAN	VOICE	INTEGRATED
1989	100%	-	-
1990	100%	-	-
1991	97%	3%	-
1992	74%	26%	-
1993*	42%	25%	33%
1994*	30%	27%	43%
1995*	38%	27%	41%

TECHNOLOGIES
(PERCENT OF U.S. REVENUE)

	SERIAL SPECTRUM	MICROWAVE	OTHER
1989	100%	-	-
1990	98%	-	2%
1991	96%	3%	1%
1992	64%	27%	9%
1993*	43%	37%	20%
1994*	43%	38%	19%
1995*	43%	41%	16%

*Projected

LAN COST PER USER

	NETWORK INTERFERENCE COST	HUB PORT	CABLE	LABOR	TOTAL COST	COST TO BUYER EACH USER
WIRELESS	\$120**	\$1,000 - \$2,000***	-	\$50	\$1,170 - \$2,170	\$50
ETHERNET	\$120	\$100	\$50	\$500	\$770	\$350
TOKEN RING	\$180	\$150	\$50	\$500	\$880	\$350
FOIR	\$1,500	\$1,500	\$100	\$750	\$3,850	\$850

**Wireless-specific, network interface card is not required except for NCS Wireless.

***Per-user pricing for high speed LAN (token ring or gigabit) wireless LAN has a wide range depending on product configuration.

Source: Frost & Sullivan/Market Intelligence, Mountain View, Calif.; The Yankee Group, Boston, Mass.

The 5th Wave by Rich Tennant



Inside Lines

Stacking the deck?

Norvell will take a swipe at Microsoft today when it announces it will integrate Starbase with Novell DOS 6.7. Microsoft would Starbase or rather Starbase would be its compressed software, then (and it is in favor of customizing someone else's software, then is using Microsoft for patent infringement. Novell and Starbase will also announce a strategic development agreement, including the prospect of a compression utility in NetWare.

Hats off to competition

MPS Datasoft will become the first carrier Thursday to fire up nationwide Asynchronous Transfer Mode (ATM) service with transport and application services available immediately in 15 cities. The San Jose, Calif.-based company's ATM network will diverge from the WWF's (aka) it currently routes, sources close to the company told.

Meet ya' later

Lotus will unveil a group version of its Organizer scheduling software at the Groupware '93 conference in San Jose, Aug. 18-19. A version that is integrated with CC-Mail will be available by the end of this month, and a version that is integrated with Notes and Vector Independent Messaging applications will follow "shortly thereafter," according to a source.

On the block? You bet!

Runners that restructuring Thomson is looking to dump part or all of smart hub company Ungermann-Bass in Santa Clara, Calif., — which it bought for \$550 million in 1986 — are backed up by Rochester, N.Y.-based Cabotronics Systems chairman Craig Benson. He said he has been approached by investment bankers twice in the past eight months about purchasing the firm. The most recent proposition came about six weeks ago, he said. However, "I have enough trouble managing a company with a 30% growth rate without taking on a company 3,000 miles away with financial problems," Benson said.

Tracking on

E. C. (Skip) Stunt has been replaced as vice president of Novistar International's IS department. Arthur J. Data Jr., formerly the head of the business and technical systems group for the company's Engine and Foundry Division, took over Stunt's post last week. Neither could be reached for comment. Stunt joined Novistar in 1988 as a senior network consultant. He was made vice president of the approximately 250-to-350-person IS department in 1991 with a mandate to implement a company-wide IS reorganization, consolidating IS and restructuring application development. A company spokeswoman said Stunt was being released for a special project but had no additional details.

Microsoft may have spoken cautiously about its financial future at last week's analysts meeting (see story page 12), but it wasn't saying that way. The company previewed some of the features that will be included in Excel 4.0 and Word 6.0, programs that are the core offerings of the Microsoft Office 4.0 suite, which the company will begin selling this fall. However, delivery of the full Office 4.0 suite is likely to be piecemeal as some applications in the suite become ready before others. Microsoft Executive Vice President Steve Ballmer said, "The major new feature in the suite will be support for OLE 2.0, which Microsoft estimates may well break down the boundary between applications. In addition to OLE 2.0, Office 4.0 will support the use of Visual Basic as a common macro language; cross application Windows; context-sensitive agents called IntelliMouse that will customize applications to a particular user's habits; and a query tool that will let applications draw data from external sources. Phone, Fax or CompuLink. News Editor Alan Dixon with news line at daily 363-6476, (800) 878-8821 or 763.734.13, respectively. Or try ComputerWorld's 24-hour voice-mail Hot Line at (800) 888-8866.

Computer Industry

Midrange players

CONTINUED FROM PAGE 1

"The fundamental implication of open systems is that hardware is a commodity, and commodity competition is not a pretty picture," said Robert Herwick, an analyst at Hambrecht & Quist, Inc., a venture capital firm in San Francisco.

"The model is the PC model," added Barbara Babcock, vice president of marketing at Stratus Computer, Inc. Even Stratus, which had been somewhat insulated from pricing pressures because of its fault-tolerant focus, now sees eroding profit margins as "unavoidable," she added.

As a result, system vendors are now "competing with people they never heard of" selling PCs and are scrambling to bring their costs down to the level that a commodity market demands, said Chris Christiansen, an analyst at market research firm International Data Corp. in Framingham, Mass.

Mixed bag

Beyond IBM, financial results in the just-finished quarter have proved to be a mixed bag for vendors trying to move from their proprietary enclaves into the open systems and client/server domains.

DEC, as expected, returned to profitability after six straight losses with a \$13.2 million increase for its fourth fiscal quarter. Revenue was flat at \$3.9 billion, though, and William Steel, DEC's chief financial officer, said the company "cannot count on a profit" in the first quarter of fiscal 1994.

Other vendors did not fare so well. For example, Tandem Computers, Inc. reported a whopping \$640.5 million loss fueled by a \$451 million charge taken to cover a 15% work force reduction. Data General Corp. lost \$16.4 million, and Wang Laboratories, Inc. lost another \$43.8 million. In short, many midrange firms' earnings reports were soaking in red ink.

Adding to woes caused by changing technology trends are weak economic conditions, especially in Europe (see story at right), analysts said. As a result, forecasts for the current quarter were not optimistic. Most midrange vendors said they remain extremely cautious about the short-term outlook.

The problem, said Jim Duncy, president and chief executive officer of Control Data Systems, Inc., is that these companies had infrastructures that were used to living off 60% or 70% margins. "They're literally half that now."

"Bigness was goodness" when companies were oriented toward manufacturing rather than services, added Geoffrey Woodcock, president of Renaissance Group International, Inc., a Pepperell, Mass., consulting firm. "Now it's an albatross."

One DEC customer empathized with what DEC and others face.

"It's tough to restructure a company," said Frank Brake, director of international operations for technology business development at Newport News Shipbuilding and Drydock Co. "Only time will tell if they're better at it than the rest of us are."

Novell flat; Banyan up in Q3

Slow NetWare 4.0 sales, sluggish industry hamper growth, Novell says

By Lynda Radosevich

Novell, Inc. said it will post uncommonly weak revenue and income for its fiscal third quarter. At the same time, Banyan Systems, Inc. reported its highest ever revenue and profit.

However, industry observers said the deviation in Novell's earnings is not linked to Banyan's success because Banyan traditionally serves the large enterprise market while Novell serves the workgroup market.

The ordinarily fast-growing Novell put the brakes on last week by announcing that it expects revenue from its fiscal third quarter, ended July 31, to be flat with its second-quarter revenue of \$281 million.

That amounts to roughly a 15% increase over the third quarter of 1992, but Novell's 1993 third-quarter net income is expected to decline from the previous quarter and roughly equal the previous year's third-quarter income of \$60 million. (Exact numbers will be released at the end of this month.)

Banyan, meanwhile, recorded revenue in its second fiscal quarter, which ended June 30, of \$32.2 million, a 17%

rise from the previous year's second quarter. Net income increased to \$3.6 million, an 89% increase over the prior year's second-quarter income.

Novell attributed its flat earnings to weak European sales. The company

the recently released NetWare 4.0. Although Novell said it expected this, it may have put too much inventory into the distribution channel in the second quarter, leading to slower sales in the third quarter, he said.

Contributing to Novell's unspectacular quarter were one-time write-offs for several purchases, including \$270 million for Unix System Laboratories, Inc. and another \$30 million for two smaller purchases, including Fluent, Inc. in Natick, Mass.

Analysts generally agreed Novell's stumble did not signal long-term growth problems but said the disclosure indicates slower growth in the entire PC industry.

Banyan had better luck by offsetting declining international revenue with strong North American sales, which were \$27.3 million, up from \$21.6 million for the same period last year.

According to Jeff Giddens, Banyan's chief financial officer, non-North American sales account for less than 25% of the company's revenue, so Banyan was not as affected by the international downturn.

Second-quarter earnings, calendar 1993

Company	Revenue	Profit	Net Income	Profit %
Adaptec	\$1.1M	\$1.1M	\$1.1M	100%
Adaptec Corp.	\$45.6M	27.2%	\$12.6M	27.4%
Computer Associates	\$216.9M	15.6%	\$33.8M	15%
Control Data Systems	\$187.7M	8.4%	\$15.8M	8.4%
Digital Equipment Corp.	\$3.9B	6.2%	\$242.2M	6.1%
Electronic Data Systems	\$34.9M	58.8%	\$20.7M	59.3%
Marconi Corp.	\$1.04M	27.5%	\$16.7M	26.2%
Microsoft Corp.	\$26.9M	14.4%	\$3.9M	14.5%
Platform Software Corp.	\$119.9M	33.3%	\$39.3M	32.7%
Proton, Inc.	\$1.2M	39.6%	\$16.2M	39.7%
Stratus Computer, Inc.	\$34.1M	60.1%	\$20.6M	60.4%
Wang Laboratories, Inc.	\$34.1M	60.1%	\$20.6M	60.4%

*Not meaningful



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A2

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